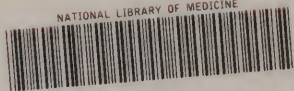
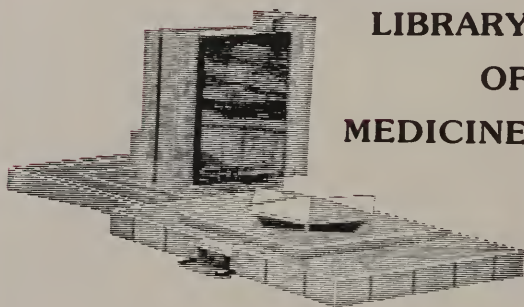


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A RETROSPECT OF SURGERY.

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PREPARED BY



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RETROSPECT OF SURGERY.

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Surgery of the Kidney.—Since my last report on the above subject a year ago, much new matter that is valuable has appeared in the medical journals, and I feel that a short account of what has been recently done in this comparatively new surgical field will be interesting to readers. In the last Retrospect I devoted considerable space to the surgery of the intestines, in which department, also, much is being done. The surgery of the kidney and of the intestines has advanced side by side, the success in each division being made possible by the great impetus operative surgery in general has received from the improved methods of treating wounds by the introduction of antiseptics.

All surgeons now agree that in certain affections of the kidney, operative measures are necessary. There is still some discussion as to the best operation to perform in certain cases and the proper method of performing it. For example, whether in advanced suppurative diseases of the kidney we should perform simple nephrotomy with drainage or complete excision, or again, whether the ventral or lumbar incision is the better one. There are at the present time four operations which are well established in the treatment of surgical diseases of the kidney, viz. : Nephrotomy, or incision of the kidney ; nephro-lithotomy, or incising the kidney for removal of stone ; nephrectomy, or excision of kidney, and nephroraphy or fixation of a floating kidney.

Simple exploration of the kidney performed by means of a lumbar incision is a comparatively safe operation, and as a

means of diagnosis is a most excellent procedure. Nephrotomy also is not exceedingly dangerous, but nephrectomy is still a very fatal operation, and von Bergmann (*Berlin Klin. Woch.*, November, 1885) remarks that the rate of mortality has not been much reduced during the last four years—for when Czerny published statistics of 72 nephrectomies performed up to 1881, the mortality was 44·4 per cent. In Gross' statistics of 233 nephrectomies performed up to 1885, the mortality still remains at 44·6 p. c. Of course many of these cases were not proper ones for operation. Von Bergmann hopes that with improved methods of diagnosis and a better method of operating, the mortality in future will not be so great as in the past. For tumors of the kidney, nephrectomy is especially fatal. In certain cases of advanced suppurative disease of the kidneys, nephrectomy is not advisable unless the condition of the other kidney can be positively ascertained to be healthy; if this cannot be done, then nephrotomy only should be performed. According to Billroth and Fischer, suppuration of kidney is generally double, and when single this fact cannot certainly be ascertained. Both Billroth and Fischer are opposed to nephrectomy in suppurative disease. Von Bergmann, however, holds that in many cases the suppurative disease is one-sided, and can be ascertained to be so by the appearance of a tumor in one or other lumbar region, by the character and situation of pain, etc. Besides, the condition of the other kidney may occasionally be recognized to be healthy by bimanual palpation. The most valuable recent contribution to the Surgery of the Kidney is one by Prof. S. W. Gross of Philadelphia, published last July in the *American Journal of the Medical Sciences*. In this article he shows very plainly that the lumbar incision is the safest method of operating. He has collected from various sources 233 cases of extirpation of the kidney; of these 129 recovered and 104 (44·63 p. c.) died. One hundred and eleven of these operations were performed by the lumbar incision, with 70 recoveries and 41 deaths (36·93 p. c.); 120 by abdominal incision, with 59 recoveries and 61 deaths (50·83 p. c.). The chief causes of death were, in the abdominal operation, peritonitis, pulmonary embol-

ism, primary hemorrhage, and uræmia ; after the lumbar operation, shock, exhaustion, septicæmia, pyæmia, anuria, secondary hemorrhage, vomiting. Primary hemorrhage rarely occurs in the lumbar operation, but is the cause of six-tenths of the deaths in the abdominal operation.

Prof. Gross thinks that nephrectomy is often performed unnecessarily, and that a better result with less risk to the patient might be obtained by one of the less formidable operations. The following are his conclusions from a study of 450 cases of different operations in the kidneys :—

(1) Lumbar nephrectomy is a safer operation than abdominal nephrectomy.

(2) Primary extirpation of the kidney is indicated (*a*) in sarcoma of adult subjects, (*b*) in benign neoplasms at any age, (*c*) in the early stage of tubercular disease, (*d*) in rupture of the ureter, and (*e*) in uretal fistula.

(3) Nephrectomy should not be resorted to till after the failure of other measures : (*a*) in subcutaneous laceration of the kidney, (*b*) in protrusion of the kidney through a wound in the loin, (*c*) in recent wounds of the kidney or of the ureter, (*d*) in suppurative lesions, (*e*) in hydro-nephrosis and cysts, (*f*) in calculus of an otherwise healthy kidney, (*g*) and painful floating kidney.

(4) Nephrectomy is absolutely contra-indicated in (*a*) sarcoma of children, (*b*) in carcinoma at any age unless disease can be diagnosed at a very early age, (*c*) in advanced period of tubercular disease.

In the paper on “*Extirpation of the Kidney*,” by von Bergmann, already referred to (*Berlin Klin. Woch.*, Nos. 46, 47, 48, Nov. 1885), the lumbar method of operating is strongly recommended. Von Bergmann has operated three times for tumor of the kidney—two by the abdominal incision and one by the lumbar. The two cases operated on by the ventral incision died ; the one by lumbar incision recovered. When the lumbar incision is practised, the danger of peritonitis is avoided. Von Bergmann has excised the kidney five times for suppurative disease, with one death. In all five cases the suppuration was

one-sided, there being in each case a tumor developed in the lumbar region of the affected side. In two of the cases the suppurative condition followed pregnancy. One of these died, but her condition before operation was far from good. She had high fever, rapid pulse, and was much emaciated. She died of shock four hours after the operation. The removed kidney was converted into two large pus sacs, and in the ureter an almond-shaped stone was found. In the two next cases the cause of the suppuration could not be ascertained. In both, the suppuration was diagnosed as one-sided. On pressure upon the lumbar tumor, there was an increase of pus in the urine. In the second case the kidney was not immediately removed, but an incision was first made into the abscess, and three months later nephrectomy performed, because the patient was gradually sinking from exhaustion due to the discharge of pus. The fifth case was one of huge abscess of right kidney in a man aged 52. The abscess was first punctured with a Dieulafoy's aspirator and eight liters of pus evacuated. This relieved the great difficulty of breathing which had previously existed. In this case also, by pressure on the tumor, the amount of pus in the urine was markedly increased. The patient not improving, and pain and swelling again returning, the kidney was cut down upon by the usual oblique lumbar incision from the outer edge of the sacro-lumbalis and eleventh rib to the anterior superior spine of the ilium. The abscess was opened and the enormously dilated kidney removed, the vessels being ligatured with catgut. The wound was sewed up in part only, a great portion being stuffed with iodoform tampons. Little blood was lost, but the patient at end of operation was almost pulseless. However, the case did well, there was no after-fever, and he was able to leave his bed in four weeks. In these cases von Bergmann states that incision of the kidney substance is usually bloodless, as the parts are so altered and anæmic that no danger results; besides, the evacuation of the pus and reduction of the size of the tumor greatly facilitates the removal of the kidney. A preliminary incision is useful in cases where it is not known if the other kidney is healthy, and does not interfere with a subsequent

extirpation. According to Gross (Loc. cit.), of 93 nephrotomies, 23 died (22.1 p. c.), 21 recovered with a fistula, and of 12 cases where nephrectomy was performed subsequently, only one died. To show the difficulties of diagnosis, von Bergmann relates a case of fistula in right lumbar region with swelling, where he, in June 1885, cut down and evacuated a large amount of pus and then enucleated the kidney; he found it shrunken and uneven, but no abscess in connection with it. He had mistaken a perirenal abscess for a renal one. The patient died in a day or two of anuria, and at the autopsy the other kidney was found to be in a similar condition to the one removed.

In the after treatment of the wound left in nephrectomy, the author strongly advocates stuffing it with iodoform gauze for 24 hours, a procedure which lessens the risk of septic infection and does not prevent primary union. In doubtful cases (for example, where a cystic kidney might be mistaken for an ovarian cyst), to clear up the diagnosis, von Bergmann advocates inflating the bowel. If the tumor is ovarian, of course no tympanitic note will be produced over it, but if a kidney tumor, the inflated bowel will partly cover it and give a tympanitic note. The author also describes a case in which he operated for hydronephrosis with complete recovery in four weeks. In performing nephrectomy or nephrotomy, the writer advocates placing a thick roll under the sound side to facilitate manipulation. In conclusion, he remarks that the oftener and earlier nephrectomy and nephrotomy are performed for suppurative diseases of the kidney, so many more cases will recover.

A writer in *L'Union Médicale de Reims* (Oct. 15, 1885), commenting on Prof. S. W. Gross' paper, adds twelve more cases of nephrectomy lately performed, principally in France, with only one death. These operations were performed by von Horoch, Polaillon, Lucas-Championnière, Ollier, Le Dentu, Trelat, Spiegelberg and others. The fatal case was one of Ollier's, operated on for tuberculous disease of the kidney. The writer also mentions a method of operating without wounding the peritoneum, advised by some French surgeons—viz., making an incision external to the edge of the rectus abdominis and peeling off the peritoneum

from the abdominal wall to reach the kidney. This might do in some cases, but where there was extensive suppurative disease of the kidney would be a difficult procedure in all cases, and impossible in many.

At a meeting of the Surgical Society of Paris, held Nov. 18, 1885, M. Polaillon reported a successful case of nephrectomy of the left kidney for calculous pyelitis. An L-shaped incision was made in the lumbar region, and after the skin incision all the tissues were severed by the thermo-cautery. The patient made a good recovery. In the discussion which followed, M. Le Dentu condemned the use of the thermo-cautery and also advised that the lumbar incision should be made as far forwards as possible.

In an article in the *Birmingham Medical Review* for Sept., 1885, Mr. Lawson Tait describes nine cases in which he had performed operations on the kidney during the year 1884. The first case was a *nephrectomy* of the right kidney for obstructed ureter in a female aged 32; perfect recovery. Case 2, female aged 19—Nephrectomy for persistent fistula following ruptured kidney cyst; recovery. Case 3, female, aged 45—Nephrectomy for supposed solid tumor of kidney; death from shock 26 hours after operation. Mr. Tait regrets not having made an exploratory incision into this tumor before attempting its removal, as it was found to really consist of a series of abscesses. Case 4, female, aged 38—Nephrotomy and drainage for relief of abscesses; temporary improvement. Case 5, female, aged 22—Nephrectomy; moveable right kidney, which was supposed to be a morbid growth of ovary or tube; abdominal section; kidney large and removed; left kidney healthy; recovery. Case 6, female, aged 25—Nephro-lithotomy; large-branched calculus removed from right kidney; rapid recovery. Case 7, female, aged 52—Nephro-lithotomy; large calculus removed from pelvis of right kidney; rapid recovery. Case 8—Supposed cyst of mesentery; abdominal section; found to be a cyst of right kidney; nephrectomy; perfect recovery. Case 9, female, aged 59—Nephrotomy of right kidney, with removal of large kidney from its pelvis; rapid recovery. Mr. Tait remarks that these cases complete a series of 40 operations on the kidney. These

operations have been performed for abscesses, hydatids, sarcoma and calculi. Thirty-eight complete cures have resulted, and, strange to say, with two exceptions, all the operations have been on the right kidney. Mr. Tait says that his experience gained in operating on the kidney has taught him that, before removing a kidney, it should always be first incised to ascertain its condition exactly. He does not think it matters much whether the lumbar or abdominal incision is made use of, but he strongly prefers the abdominal incision if the kidney is to be removed, on account of the facility with which the condition of the other kidney can be ascertained before proceeding with the operation. For simple nephrotomy, he prefers the lumbar incision. He condemns the attempt at removal of malignant tumors in children under 15.

Demonstration of Extirpated Kidneys.—At the late German Surgical Congress, Baron Horoch (Vienna) exhibited a malignant tumor of the kidney removed by Prof. Albert from a woman aged 40, by lumbar operation; although the peritoneum was torn, patient was discharged completely cured in four weeks.

Dr. Claus exhibited a fibroma of the kidney, to which was attached a large cyst, whose wall was the distended kidney capsule. It was of large size, and diagnosed as a monolocular ovarian tumor. Removed by abdominal section. Patient left hospital in four weeks.

In the discussion which followed, Prof. König stated that he had recently removed the kidney in two cases in children. Both operations were by abdominal section; one was for myo-sarcoma. Both operations were easy and successful. Schönborn said that he had successfully removed an adenoma of the kidney in a child; no recurrence at end of four weeks.—(*Central. f. Chir.*, 1885, No. 24; quoted in *Annals of Surgery*, Nov. 1885.)

Nephrectomy for Sarcoma.—In the *Medical Press and Circular* for March, 1885, Mr. R. N. Pugh reports a fatal case of nephrectomy in a child aged 2 years and 4 months, who was admitted into the Children's Infirmary, Liverpool, for a tumor of left side of abdomen. Abdominal section performed, and left

kidney removed. Vomiting came on two days after operation, and death occurred on the twenty-third day. Post-mortem showed the cause of death to be strangulation of a portion of small intestine which had protruded through a rent in the peritoneum behind the colon.

Nephrectomy.—Mr. Knowsley Thornton (*Med. Times and Gazette*, March 14th, '85) reports a case of abdominal nephrectomy performed in a woman, aged 32, for calculous pyelitis of right kidney. Wound soundly healed on fourteenth day.

Dr. C. K. Briddon reported to the New York Surgical Society (*Medical News*, Jan. 30, '86) a case of nephrectomy for calculous pyelitis of right kidney in a woman aged 36. The lumbar incision was first made and kidney exposed; as it felt solid and non-fluctuating, and it was of such size that the hilus could not be reached, removal by abdominal incision was immediately resolved upon. On separating the kidney, an abscess cavity was torn open and about 8 ozs. of pus escaped into peritoneal cavity. The kidney was removed without great difficulty, but the woman died within a week of septicæmia. The removed kidney was much disorganized, and contained a large calculus in the pelvis.

Dr. Briddon, in this case, evidently committed a great error in not first incising the kidney before resorting to abdominal incision; had he done so, he would have evacuated the contained pus, removed the kidney by the lumbar incision, and probably have saved his patient; or, if he was doubtful about the condition of the other kidney, he could have performed a preliminary nephrotomy.

Dr. Lange (*Medical News*, Jan. 16th, '86) reports a case of nephrectomy for a pyonephrotic kidney. The patient was a woman aged 26, who frequently had bloody urine, and always severe pain; case thought to be one of stone. Under chloroform, both kidneys could be distinctly made out to be of apparently normal size. Kidney cut down upon, and by lumbar incision was found cystic and the ureter and pelvis almost obliterated. Patient made a rapid recovery, and was relieved by the operation, but the author thinks there is probable disease of the other kidney, and that the outlook is not hopeful.

Colquhoun (*Lancet*, June 12th, '85, p. 1081) reports a successful case of left nephrectomy in a man aged 41, for calculous pyelitis. Patient had suffered from symptoms of stone for 16 years. The operation was performed in the Dunedin Hospital, New Zealand.

I might add to the foregoing cases of nephrectomy two additional ones, reported at a recent meeting of the Montreal Medico-Chirurgical Society; both successful. One was performed by Dr. W. H. Hingston for distended and painful left kidney, with obliteration of the ureter, in a girl aged 18: the other performed by myself in a woman aged 24, for advanced calculus pyelitis of the left kidney. The latter case is reported in the *New York Medical Record* for December 12, 1885.

Renal Lithotomy.—In the *British Medical Journal* of September 5th, 1885, Mr. R. H. Bouchier Nicholson reports a successful case of nephro-lithotomy in a woman aged 42, who had suffered severe pain and had been passing pus for two years. A tumor about the size of an orange could be felt on left loin. It was cut down, and on incising kidney a considerable quantity of pus escaped. In introducing his finger into the incision a large branched calculus was found, and removed several smaller ones. The woman made good recovery.

Calculi removed from Kidney by combined Abdominal and Lumbar Sections.—Mr. Knowsley Thornton (*Med. Times and Gazette*, July 4th, 1885,) reports the case of a woman, aged 25, who suffered from symptoms of renal calculus. Abdominal section by Langenbuch's incision (outer side of rectus). Introduced hand into abdomen; no stone felt in left kidney; the right examined, and stone made out by pushing finger through peritoneum. Then a director was pushed through the loin till it reached the skin. Here it was cut down upon from without and the incision enlarged with a bistoury. A director was then passed through the wound in loin from without, till it reached the stone, and the stone was then cut down upon through the pelvis of the kidney and extracted. A drainage tube was passed through the loin into the pelvis of the kidney, the peritoneum sponged out and abdominal wound closed. Fifteen

months later, patient was again admitted into hospital suffering from symptoms which led to the supposition of the presence of calculus in left kidney. An abdominal incision was made, the hand introduced, and no stone found—so the right kidney was examined and a stone at once detected in the pelvis. It was removed by the combined operation as before, and another stone was found and extracted from one of the calyces. The patient recovered.

(It seems to me that if Mr. Thornton had performed the lumbar operation in the first instance he would have discovered all the calculi, and would have relieved his patient by a simple operation instead of by two very complicated ones.)

Nephrotomy and Nephro-Lithotomy.—Mr. Bennett May (*Brit. Med. Jour.*, Oct. 31, p. 837,) reports three cases of the above. Case 1, youth aged 20—Symptoms of calculi well marked, and lasted 14 years; lumbar incision and removal of calculi; free hemorrhage stopped by plugging; subsequent perinephric suppuration; death in three weeks from pyæmia. Case 2, male aged 35—Symptoms of stone for 10 years; stone detected by acupuncture; lumbar incision and removal of large stone; rapid recovery. Case 3, female aged 23—Symptoms of renal calculus well marked for 18 months; had passed a calculus per urethram. Incision made, but failed to find stone; rapid recovery, with relief of symptoms.

At a meeting of the London Clinical Society, held February 27th, 1885 (*Lancet*, March 7th, 1885), Mr. Henry Morris reported a successful case of nephro-lithotomy, in which a calculus was removed from the left kidney. Had suffered from pains in the loins ever since boyhood, but during the last two years pains had increased, so as to prevent his working. At the same meeting, Mr. Charles J. Symonds reported a case of nephro-lithotomy in a man aged 50, who had suffered 24 years from renal colic. Stone removed from the left kidney; good recovery.

Nephro-Lithotomy after Nephrectomy.—Mr. Clement Lucas operated on a unique case in Guy's Hospital on October 29th, 1885. A woman upon whom he had performed nephrectomy

about four months before, for complete destruction of the right kidney by large calculi and hydronephrosis, and who had made a rapid and perfect recovery, was suddenly seized with great pain in the region of the other kidney, followed by vomiting, headache, and suppression of urine. The symptoms commenced early Sunday morning, October 25th, from which time no urine had been voided. She was removed to hospital on Wednesday, October 27th, and treated with diuretics for 24 hours. This having no effect and the symptoms being very serious, Mr. Lucas cut down on the remaining kidney and removed a conical calculus. Total suppression of urine had lasted 102 hours. Free drainage of urine immediately took place from the wound, and vomiting and headache at once ceased. The patient had perfectly recovered when last heard from—January 1886.

Treatment of Kidneys in an advanced stage of Suppuration by Drainage.—Mr. W. Bruce Clarke (*Lancet*, November 7th, 1885,) says that in many cases of suppurative disease it is absolutely impossible to remove the kidney with safety, owing to the number of adhesions by dense cicatricial tissue to surrounding organs and bloodvessels. He relates a case in a woman aged 42, with a sinus near the apex of the last rib leading down to a suppurating kidney. Stone being suspected as the cause, the sinus was explored and found to pass upwards between the liver and the ribs for some six inches ; the patient becoming very faint, the operation was suspended. The woman died of peritonitis five days after the exploration of the sinus. At the post-mortem, it was found that some thin peritoneal adhesions had been broken down, and this had given rise to peritonitis, which caused her death. The kidney itself was surrounded by a large amount of thickened tissue, and firmly attached to the neighboring organs and tissues. A calculus was found in the kidney. Mr. Clarke thinks it would have been impossible to remove the kidney during life. In such cases as these, Mr. Bruce Clarke advises that the procedure advocated by Mr. Clement Lucas some years ago should be adopted—viz., incision and drainage of the suppurating kidney. He draws attention to 13 cases of attempted

nephrectomy, within the last few years, for suppurative disease of the kidney. In two, the operation of nephrectomy was abandoned, and nephrotomy employed with success ; in the remaining eleven, only two recovered.

The author goes on to say that when a kidney has already been subjected to nephrotomy and drained, the condition of the two organs can be easily ascertained ; and if the healthy kidney be sufficient for the wants of the individual, and the diseased one little more than a suppurating sac, obliteration of the abscess cavity is indicated, either by scraping and irrigation or removal of the whole kidney. Which is the better method, he leaves to be decided by future investigation. After the kidney has been incised and drained, its subsequent removal can be effected with less danger to life than if a primary nephrectomy had been attempted.

Mr. Clement Lucas, in a letter commenting on this paper (*Lancet*, Nov. 28th, '85), says a little bolder surgery might have led to a more successful termination in Mr. Bruce Clark's case. He says why probe the sinus at all ; why not cut directly down on the kidney at once. He does not believe that there are kidneys which cannot be removed ; however adherent, it is always possible to remove the kidney from within its capsule, for the soft tissue breaks away from the fibrous covering, though bands here and there may need to be divided. He thinks it is always possible to remove the kidney, but not always proper, without first trying the effect of drainage.

Supra-pubic Lithotomy.—This old operation which was discarded in favor of the lateral on account of its high mortality has, within quite a recent period, been successfully revived. It has been extensively practised by the most eminent surgeons of Germany, Austria, Holland and America; and even that most conservative of surgeons, Sir Henry Thompson, although he had been previously opposed to it, is now its strongest advocate. Sir Henry says (*Lancet*, Dec. 5th, 1885): “It is my belief that in the hands of most operating surgeons this proceeding (the supra-pubic operation) will prove a safer and far easier one than lithotomy, with all its advantages, for hard stones when they have arrived at a weight of about $1\frac{1}{2}$ or 2 oz.”

This operation is easy of performance and free from many of the dangers which accompany the lateral—such as hemorrhage, wound of rectum, and injury to the neck of bladder if the stone be large. The great objections heretofore to the supra-pubic operation have been the danger of urinary infiltration of the cellular tissue about the neck of the bladder and the risk of wounding the peritoneum. The first danger may almost certainly be avoided if proper antiseptic precautions be taken, and the second need only occur in those rare cases where the peritoneum reaches down between the bladder and symphysis pubis. Even this danger is avoided by making use of Petersen’s method of pushing up an already distended bladder by means of a pear-shaped rubber bag introduced into the rectum and then distended with water. In this way a considerable supra-pubic space is obtained free from peritoneum, and the viscus being supported below, manipulation of its interior is more easy. Sir Henry Thompson’s plan is first to push up the bladder by means of Petersen’s bag and then inject the bladder itself with six or eight ounces of a mild antiseptic solution; carbolic acid 1–1000 is the one used by him, but other weak solutions, as bichloride, boroglyceride, or boracic acid, would answer as well. After the injecting catheter is removed, the penis is firmly ligatured with indiarubber tubing. An incision about three inches long is made in median line down to the symphysis pubis, and when the transversalis fascia has been reached and cut through, the yellow fat

in front of the bladder is seen, and now the finger-nail should be used to clear the tissue over the bladder and thus avoid wounding the veins; when the bladder is reached, it is pulled up by a sharp hook which should enter the viscus, and then an incision is made large enough to admit the forefinger to feel for stone; if very large, the incision in bladder should be increased by gently tearing the parts, and the stone extracted with the two forefingers or forceps. Sir Henry, after the stone has been extracted, leaves the wound open, and for 24 to 48 hours keeps in a large drainage-tube; a soft, full sized catheter is also introduced into the bladder. Out of ten operations in favorable cases performed by Sir Henry, he has had only one death. He thinks the supra-pubic operation eminently suitable for the removal of tumors; in these cases the wound in the bladder should be kept open by passing two stout silk ligatures through the margins.

The method of after-treatment above described is not the only one which is advocated. Recently a number of cases have been reported where the wound in the bladder has been closed immediately by sutures, as also the incision in the abdominal walls. Von Bruns was the first surgeon to suture the bladder after lithotomy; this he did successfully in two cases in 1857-58. (Editorial *Medical News*, Sept. 12, 1885.) Both cases were in children. Suturing the bladder separately should only be done in suitable cases; if primary union cannot be obtained, owing to position of bladder or condition of parts, it is, of course, useless.

Dr. Géza advocates (*Langenbeck's Archiv*, Bd. XXXII, Hft. 2, 1885) first excising an elliptical portion of the bladder down the mucous membrane, a little larger than the required incision, then incising the mucous membrane and sewing up the bladder with antiseptic silk sutures. The mucous membrane is not included in the sutures.

Dr. Starr (*Amer. Jour. Med. Sciences*, July 1877) reported a successful case, in which he included the abdominal wall and bladder in the same suture. Each stitch passed through one side of abdominal wound, included a part of bladder wall on one side of bladder wound, and then crossed the wound and included

a similar portion of bladder wall on other side, and finally passed through the abdominal wall to surface. When the sutures were tightened, the bladder wall was slightly inverted, and the edges of wound in abdominal walls brought close together.

Dr. L. S. Pilcher of Brooklyn (*Annals of Surgery*, Feb. 1886, p. 171) reported a successful case to the New York Surgical Society of supra-pubic lithotomy with suture of bladder wound. In this case he made an oblique incision into bladder wall, and after removing the stone, closed the wound by eight fine silk sutures passing through only the muscular and sub-mucous layers of the viscus. The external wound was brought together with catgut sutures and harelip pins, and dressed with iodoform and cotton wool. The man went home well on the eleventh day, primary union having everywhere taken place.

At a meeting of the Royal Medical and Chirurgical Society of London, March 30th, 1886 (*Brit. Med. Journal*, April 3), Mr. Richard Barwell read a paper on *Supra-pubic Lithotomy*. The author pointed out a not unfrequent sequela of urethro- or vesico-vaginal lithotomy is an intractable form of vesico-vaginal fistula, and that the supra-pubic operation altogether prevented this. He related the case of a young girl aged 9, from whom he had removed a large stone successfully by the supra-pubic method. The wound closed in two weeks. Also the case of a man aged 60, in whom a similar operation had, with the best results, been performed. The bladder was sutured in both cases. No rectal bag was used. The fluid employed was boro-glyceride. He held that distension of the rectum had very little influence on the anterior fold of the peritoneum, and that injection of the bladder would always raise it high enough.

At the same meeting, Mr. Walter Rivington related the case of a man, aged 61, who had an encysted calculus, which was removed by the supra-pubic method. It could not be extracted with the forceps. Lithotrites were useless, so the stone was broken with hammer and chisel, and extracted piecemeal; weight of fragments, 23 ozs. After extraction, the wound in the bladder and in the soft parts were separately sutured. The patient rallied well from the operation, and at end of three months was

well. He, about this time, had an attack of cystitis, and death ensued. Suppurative nephritis of left kidney was found, with cystitis of the bladder. Although this calculus is not the largest removed from a human bladder during life, it appears to be the largest removed during life with recovery of patient from the immediate effects of the operation.

Mr. W. H. A. Jacobson also reported a case of supra-pubic lithotomy in a young man, aged 19, from whom a large stone was removed. No sutures in bladder or drainage-tube in the wound, or catheter in the bladder, were made use of. He first passed urine per urethram on the 23rd day.

In the discussion which followed the reading of these papers, Sir Henry Thompson said that foreign surgeons agreed with English surgeons in saying that the surgeon with little experience or skill had better use a cutting operation, and the best for him was a supra-pubic lithotomy, with some of the modern improvements. He said that the exact position of the anterior peritoneal fold was of little importance, although he believed, notwithstanding what Mr. Barwell had said, that the rectal bag was valuable, not only from the fact, as Bouley strongly contended, that the supra-pubic interval was increased, but from the fact that it made the bladder firm under the finger, and brought it up from the pelvis into the abdomen. Hildanus, in the 17th century, had shown how it was possible to push up the stone above the margin of the pubes in children by pressure inside the rectum. The distension of the rectum was most valuable in the removal of large tumors of the bladder by the supra-pubic method. There was less hemorrhage; he had only to tie one vessel in nine operations, and eight of the patients were still alive.

Mr. Cadge of Norwich said he wished to throw in a word of caution in this matter against a too enthusiastic recommendation of the supra-pubic operation. At the time of Cheselden and Douglas, men were eagerly in favor of it. Afterwards it was coldly neglected. Experience was too limited at present to justify surgeons in proposing to abandon the lateral operation. About a dozen cases had been referred to that evening, with two deaths. He thought, at least, ten of these cases could have

been dealt with by the lateral operation, and Mr. Creighton of Dundee had shown that stones weighing from 4 ozs. to 8 ozs. might be successfully dealt with by the old operation. A dozen operations with one death! Martineau of Norwich had done 84 lateral lithotomies, with two deaths. He agreed with Mr. Barwell in saying that distension of the rectum was not of much use in raising the pre-vesical fold of peritoneum, but that it was mainly useful in raising the fundus of the bladder, which it could do even as much as two inches. The absence of hemorrhage was another quoted advantage of the high operation, but in the dozen or so of cases reported that evening there had been three with decided hemorrhages. If the rectal bag were injected as full as Petersen advises (22 ozs.), there was danger of rupturing the rectum, as happened in one of his own cases.

Both Mr. Chas. Stewart and Mr. Bryant stated that they had tested the effect of the distension of the rectum on the position of the bladder, on the dead subject, and their experiments agreed with Dr. Garson's. There was no doubt more bladder surface was exposed above the pubes by distending the rectum.

Mr. Lund urged that in the lateral operation, the danger arising from bruising the tissues made them unfavorable for healing; there was no bruising in the supra-pubic method. The use of anæsthetics, he believed, was one reason why the operation might now be regarded with more favor than it was during the last century.

Dr. Orłowski of Warsaw reports (*Deut. Zeitschr. f. Chir.*, Dec. 1885) three cases of supra-pubic lithotomy, with one death in a very debilitated old man. The author encountered a case in which the pre-vesical fold of peritoneum reached down as far as the pubic symphysis, and in consequence he insists on using a grooved director when incising the abdomen. He advocates the use of silk thread passed through the muscular walls of the bladder instead of hooks or retractors. He advises the immediate suture of the bladder, which mode of treatment, he says, shortens the after-treatment by ten days.

Lithotomy at German Surgical Congress.—At the recent meeting of the German Surgical Congress, held at Berlin April

7th, lithotomy was discussed. The discussion was opened by Koenig (Göttingen), who said that in his experience median lithotomy was the safest and easiest, and the wound healed more rapidly than by any other method. His experience with the hypogastric method was small, but unfavorable. Out of five cases of supra-pubic lithotomy he had lost four; three of these died of pelvic cellulitis. According to Merewin, of 147 median lithotomies only 9 died, whilst Garcia, in 94 cases of the supra-pubic, noted a mortality of 24 per cent.; 5 cases died of pelvic cellulitis. Tuffier, in 120 cases treated by this method, gives a mortality of 27 per cent. Koenig's conclusions are that for small stones the median perineal operation is the best, and that the supra-pubic method, although it exposes the patient to the risk of urinary infiltration, gives easy access to the bladder, and the extraction of large stones and foreign bodies can be easily effected by it. After the median perineal operation, he always plugs the wound with iodoform gauze, which was removed when saturated, and the wound and bladder washed out.

Ebermann (St. Petersburg) thought that for most stones the median perineal was the best. In cases of encysted calculi and enlarged prostate, he preferred the supra-pubic; he looked upon lateral lithotomy as a superfluous method. With regard to lithotripsy, it furnished the best results (in the speaker's own cases a mortality of 1 in 12), but required much practice. It should not be performed without rendering the bladder aseptic. It was contraindicated in paralysis of the bladder, or when that organ was very irritable, or when stricture of the urethra existed. Where there was old suppurative disease of the bladder, or a renal lesion, he preferred lithotomy.

Bergmann (Berlin) defended the supra-pubic operation, and held that it was not so dangerous as stated. In a general way he agreed with Koenig. The great advantage of the supra-pubic method was that the bladder could be surely emptied of calculi. He did not think cellulitis followed this operation as often as it did the median perineal. Cellulitis could be avoided in the supra-pubic operation by the immediate closure of the bladder by Lembert's suture and by the employment of iodoform gauze

dressings. In most of his cases the bladder united by first intention, and in a few the urine flowed for a day or two. He was in the habit of closing the upper end of the abdominal wound and dressing it with iodoform gauze, leaving the lower end open, so that if cellulitis occurred it would be localized. He preferred the supra-pubic method in all cases complicated with renal affection.

Trendelenburg (Bonn) did not suture the bladder, but introduced a drainage-tube, and for the first few days made the patient rest on the side ; by this proceeding he had obtained the best results.

Volkmanⁿ (Halle) said that he had had only two deaths in a hundred cases of lithotomy by the median perineal method ; he preferred this method because the prostate was not injured, and he had extracted in this way stones of large size. The supra-pubic method he considered more dangerous than ovariectomy. If the stone is large, he crushes it in the bladder, through the perineal wound. The supra-pubic method should be employed only where the stone is very large.

Schède (Hamburg) also practised the median perineal operation. He was in the habit of suturing the cut edge of the urethra to the skin and so avoided hemorrhage. He also introduced a tube the size of his thumb into the bladder, and for the first eight days washed out the bladder with boracic solution. Lithotripsy often left fragments in the bladder.

Fuersteinham (Berlin) and Schönborn (Königsberg) defended the operation of lithotripsy, and held that when it was badly performed it was dangerous, but in the hands of skilful and experienced men was the best operation.

Sonnenburg (Berlin), encouraged by the success of Bergmann, Trendelenburg and Dittel, had practiced the supra-pubic method with the best results, even in very obese individuals. He alluded to two supra-pubic operations where a fistulous opening resulted. He thought these cases of fistulous openings resulted from an adherence between the bladder and the walls of the abdomen. Once he had wounded the peritoneum in a case where it had reached and was adherent to the symphysis pubis. The patient recovered.

Israël (Berlin), in one case, had seen this anomalous arrangement of the peritoneum. When a fistulous opening resulted from the supra-pubic operation, it required very energetic measures to close it. In one case he had resected the whole cicatricial tissue and applied a new kind of suture. He had employed Ebermann's method of suturing the cut edge of the bladder to the abdominal wound with good results as to preventing the occurrence of cellulitis.

Gussenbauer (Prague) said he preferred lithotripsy to lithotomy, except in those cases where the stone completely filled the bladder, the bladder was injured, or the kidneys were diseased. The perineal operation was very well when the stone was small, and he always had recourse to it when operating on children. When it was necessary to crush the stone, he preferred the lateral operation. He only employed the supra-pubic operation when the stone completely filled the bladder. He has had two such cases. In one, the peritoneum came down to the pubis and it was wounded; the patient, who was suffering from pyelo-nephritis, died of acute peritonitis. In the other case, the stone was so large that he had to detach the origin of the two recti muscles in order to extract it; the patient recovered. In fat subjects, he thought the supra-pubic operation should not be performed. After the median perineal operation, he always plugged the wound with gauze, and did not introduce a tube, which irritated the bladder, but preferred to catheterize the patient for a short time after the operation.

Kuester (Berlin) said that perineal section was sometimes not sufficient. When the prostate was enlarged, the bladder could not be thoroughly explored. On these occasions he had to resort to the supra-pubic method, after having failed to complete the operation by the perineal incision. It was not always possible to dilate the prostatic urethra without tearing the parts. In two cases he had torn the prostate and caused the death of the patients.

Petersen (Kiel) thought that relapses after lithotomy were not always due to the manner of performing the operation, for very often they are caused by a new descent of stones from the kidney. He could not understand why his method of distending

the rectum was not accepted. It was not necessary to wound the peritoneum when his method was not employed, but by it the operation was greatly facilitated. Fistulæ following the operation were caused by a too rapid healing of the abdominal wound before closure of the bladder incision. The external wound should be kept open till the bladder wound was closed. The discussion had convinced him that, contrary to his previous views, there were cases where it was necessary to perform lithotrity.—(Condensed from *La Semaine Médicale*, April 21st and 27th.)

This discussion seems to prove that, in Germany at any rate, lithotrity has been to a great extent abandoned for median perineal lithotomy, and also that the supra-pubic operation is yet on its trial, and only employed for very large stones and in those cases of hypertrophied prostate where perineal section has failed. This discussion will be a surprise to most English and American surgeons, among whom the idea is growing that lithotomy has had its day and lithotrity is the operation of the future, with, perhaps, occasional supra-pubic lithotomy for large hard stones. Much more light is needed before a proper conclusion is arrived at. It is certainly significant that so many German surgeons of such immense experience should be so strongly in favor of median lithotomy.

Simple Fracture of the Patella.—The treatment of this fracture is still a subject for discussion among surgeons. Some advocate wiring the fragments, others prefer using apparatus. In considering the treatment of this injury, which does not always come under the care of the pure surgeon, but is often treated by the general practitioner, that method ought to be advocated which is the least dangerous as regards the life of the patient. Now any medical man is capable of treating fracture of the patella successfully by plaster or other splints, but only a few can with impunity cut into a knee-joint and suture the fragments without risk to the patient, and even these few, who must be men of large experience in modern surgery, have their failures. Certainly by suturing we get bony union, but is this much to be preferred to the close fibrous union obtained by other methods

without the patient running any risk of his life. I have seen cases of fracture of the patella, where suture of the fragments has been resorted to by very able surgeons, and yet suppuration has taken place and the joint been destroyed. It certainly appears to me wiser to advocate the safer plan, and one suited to men of even limited surgical experience. I know that if it ever happened that I should be unfortunate enough to break my patella, I should decline to have the fragments sutured, but should prefer Heath's treatment by aspiration, if necessary, and the immediate application of plaster-of-paris bandages. This is the method that I myself have employed during the past two years with very good results. In my opinion, wiring the fragments is only justifiable in cases of compound fracture of the patella.

At the meeting of the New York County Medical Association, held October 19th, 1885, Dr. Fred. S. Dennis read a paper on "*Fracture of the Patella, with illustrative cases*" (*Med. News*, Oct. 31, '85). The paper was devoted to the treatment of this accident by wiring together the fragments. He stated that previous to 1883 two cases out of 49 treated by this method had terminated fatally, while in 6, suppuration and ankylosis had followed the operation. Since 1883 a great number of cases had been treated by wiring the fragment, without, as far as the author knew, a single death and with but three cases of suppuration. Dr. Dennis stated that personally he had treated some 60 cases of fracture of the patella, and that previous to adopting the wiring he had obtained the best results from the method of the late Dr. James Little with plaster-of-paris. With the new operation, bony union is the rule. The advantages of operation are: 1. Absence of danger to life and limb. 2. The superior results as regards the function of the limb and the joint. 3. The greater rapidity of repair. In one case amputation had been necessary because erysipelas had been contracted. He had had one death following wiring of the patella, but in his opinion the operation had nothing to do with the result. At the autopsy (six days after) the joint was found aseptic. Death was due to delirium tremens, and Bright's disease. There was firm bony union in this case. After describing this operation in detail, he ended with the following conclusions:—

1. In compound fracture of the patella, there is not the slightest doubt of the propriety of the operation.

2. In recent and old fractures, under ordinary circumstances and with the patient's consent, it is wholly justifiable.

3. In debilitated patients and those suffering from organic diseases, the operation should not be performed.

4. It is not an operation which can be indiscriminately performed. It should never be undertaken by the inexperienced or by those who have not the most complete faith in the efficacy of antiseptic surgery.

5. Success depends on the most thorough carrying out of the minutest details of antiseptic procedure.

Dr. Dennis exhibited a number of interesting cases after the reading of the paper.

Robt. L. Swan (Dublin), in a letter to the *Brit. Med. Jour.*, Jan. 9th, 1886, gives the following description of his method of treating transverse fracture of the patella:—"An Esmarch's bandage having been applied to the limb, a vertical incision four inches in length is made, commencing one inch above the base of the patella, through skin and fascia, down to the tendon. The coverings having been reflected, a transverse incision is made through the tendon, carefully avoiding its posterior investment at the centre of the incision, or three inches above the patellar base. The anterior fibres of the vasti, which are found to act on the aponeurotic bands, which cause the upper fragment to revolve on its own axis and thus produce gaping at the site of the fracture, are now divided as much as may be necessary. The fragment is then found to lie evenly in its position. Strict antiseptic precautions, physiological pressure, and avoiding the disturbance of the reparative processes, ensure a speedy healing of the wound."

Mr. Walter Rivington, in the *Lancet* of Jan. 24th, 1885, reports a case of transverse fracture of the patella in which he aspirated the joint and then attempted to approximate the fragments with Malgaigne's hooks inserted into strappings of gutta percha. Soon, however, pus was oozing out where he tapped

the joint, so he cut down, washed out the joint, and sutured the patella. Result was bony union, but very little movement.

In the *Annals of Surgery* for September, 1885, Dr. Geo. B. Fowler reports a case of compound comminuted fracture of the patella in which he used wire sutures. There was necrosis of upper fragment, which was removed. The patient recovered with a useful limb.

Suture of Patella with Catgut.—Dr. Stimson showed the New York Surgical Society, Jan. 26th, 1886, a patella which he had occasion to divide in an operation of excision of knee. The patella was sutured with catgut. Subsequently he removed the patella, which was so thoroughly united that the line of union could not be seen.

Antiseptic Irrigation of the Knee-Joint for Chronic Serous Synovitis.—Dr. Robt. F. Weir published a paper on the above subject in the *New York Medical Journal* for Feb. 20th, 1886. He says that though the treatment of chronic synovitis by evacuating the joint of its excessive secretion and washing it out with a carbolic acid solution has been known to many surgeons since Schede wrote on the subject in 1875, yet it has not been appreciated and practiced by surgeons as it should. Its merit has been largely tested in Germany and Austria. Rinne's conclusions are "that puncture and washing out of a joint with a three or five per cent. solution of carbolic acid is to be recommended in—1, Subacute or chronic synovitis after failure of the usual treatment. 2, In undoubted hydrops articuli. 3, In threatening pyarthrosis from any cause. 4, In certain obstinate cases of gouty synovitis." Dr. Weir, from his own experience, is convinced of the value of this method of treatment in chronic serous synovitis, and thinks it a plan which can be applied, not only to the so-called hydrops articuli, but also to the lingering effusions that remain so often obstinate to the use of rest, elastic and other pressure, and counter-irritants from iodine to the Paquelin cautery. The puncture is made at the inner or outer side of the upper synovial pouch, after it has been rendered more tense by pressure from the opposite side. If this pressure is carefully managed, not only at this stage, but also during each

evacuation of the joint, being gradually removed while the joint is filling up with the carbolic solution, there will be no entrance of air into the articulation. A rather large-sized, carefully disinfected, ordinary trocar and canula is chosen to avoid the plugging of its lumen by the lymph flocculi. After the joint is evacuated of its fluid, a 1 to 20 warm solution of carbolic acid is allowed to flow from a fountain syringe through the cannula till the joint is distended, when the nozzle of the syringe is removed and the solution permitted to escape from the joint; this should be repeated several times till the fluid comes out clear. The joint is finally emptied, and while pressure is firmly made the cannula is withdrawn with a jerk and the knee enveloped in sublimate gauze dusted over with iodoform, over this absorbent cotton, and the whole bandaged and then immobilized with a plaster-of-paris splint." This treatment is attended by but slight reaction and the best results. Dr. Weir narrates seven cases to show the value of this treatment, and concludes by saying that Volkmann has been able to effect a cure and save the limb by repeating these injections three or four times at intervals of several weeks.

Surgical Treatment of Peri-typhlitic Abscess.—Dr. Wm. T. Bull (*New York Med. Record*, March 6th, 1886) reports a most interesting series of cases of peri-typhlitic abscess, where he had cut down (in some cases 48 hours after the symptoms became acute) and opened the abscess to the great relief and safety of the patient. In these cases Dr. Bull advocates early exploration with a long needle attached to a very tight syringe. In one case, where no pus was found by thrusting a 3-inch needle directly backwards into the iliac fossa, by using a longer needle and pushing it from a point above and behind the anterior superior spine toward the middle of the fossa to the depth of four inches offensive and bloody pus was met with. An incision was made above and to the outer side of the middle of Poupart's ligament, and about an ounce of foetid pus evacuated. Six weeks after a calculus was removed from the bottom of the sinus with forceps. In this case the operation was performed within 48 hours of the onset of the acute symptoms. The author goes on

to say that in peri-typhlitis the general symptoms and local conditions may furnish valuable indications of the presence of pus, but thorough exploration with the needle is the best means of diagnosis. He strongly insists on opening these abscesses early, as soon as pus can be got by needle exploration. For even when the abscess opens into the bowel it is still apt to burrow, and if it does not eventually cause the death of the patient, leaves sinuses which last for months. No time can be fixed for opening these abscesses. We must be guided entirely by the evidence afforded by needle exploration. The author states that the results of Dr. Noyes' investigation of 100 cases treated by incision 85 per cent. recovered, a mortality of 15 per cent; in the 67 cases collected by the author in 1872, when no early operation was performed, the mortality was 47 per cent.

Dr. Bull's paper is a very valuable one, and especially directs the attention of medical men to the importance of looking for the formation of pus in these cases, and not waiting till it either comes to the surface or bursts into the peritoneum, and shows conclusively the great benefit, as regards the life of the patient, of evacuating these abscesses at the earliest possible period.

I can recollect seeing not a few cases in the post-mortem room which, if they had been treated in the manner described by Dr. Bull, would, perhaps, still have been fulfilling their earthly duties. In one remarkable case reported to the Montreal Medico-Chirurgical Society some years ago, the pus had burrowed upwards, had perforated the diaphragm, and filled one of the pleural cavities. The importance of early and frequent needle exploration in cases, where the general symptoms and local conditions indicate the formation of pus, cannot be too often and too strongly insisted on.

Digital Divulsion for Pyloric Stenosis.—(Loreta's operation, see Retrospect for March, 1885.)—In the *Medical News* for January 16th, 1886, is a record of two operations for digital divulsion of the pylorus performed on the same day, July 16th, 1885, in St. Luke's Hospital, New York, by Dr. C. McBurney. Both these operations ended fatally. One, a woman, who had simple stenosis, died of hemorrhage due to laceration of the

pylorus. The second case was that of a woman aged 52, who died 30 hours after the operation of suppression of urine. At the post-mortem, the pylorus was found widely dilated, and no rupture of the mucous membrane existed. The stenosis in this case was caused by a large, old ulcer situated posteriorly, and partially cicatrized. The base of the ulcer was adherent to the pancreas, and the edges were much thickened. The pyloric orifice lay immediately next to the right and upper edge of the ulcer.

Excision of Pylorus for Cancer.—This operation was reported to the Surgical Society of New York by Dr. Sands (*Medical News*, March 20th, 1886). The patient, a man aged 31, suffered from dyspeptic symptoms for the last three years. Tumor felt at pyloric extremity. An incision was made transversely about $3\frac{1}{2}$ inches long, directly over pyloric extremity. After separating peritoneum and enclosing the pylorus between two sets of clamps, the stomach was then cut through. The wound was brought together by seven interrupted silk sutures internally and six Lembert's sutures, four of silk and two of catgut. The operation lasted four hours. Patient gradually sank and died about 36 hours after the operation. Dr. Sands stated that the operation had been performed too late, and was sorry he had not performed Loreta's operation. At the post-mortem, the cancerous infiltration was found to extend beyond the line of section.

Tetanus.—The pathology of tetanus is as yet but little understood. Cases of cure of this disease are from time to time reported, they are doubtless quite authentic, and show that the disease is not necessarily fatal. Chloral in large doses is the favorite remedy, and in some cases the results of treatment by this drug are encouraging, whilst in others chloral appears to have not the slightest influence for good on the disease. Till the pathology of the affection is better known, all treatment must be to a greater or less extent empirical. Many observers look upon tetanus as due to the introduction of some virus from without, for nearly all the cases follow the receipt of an injury; the cases of so-called idiopathic tetanus being rare, and in some in-

stances due to forgotten injury. The nervous theory has much in its favor, and a cure which recently has occurred in Zurich illustrates this. A boy, aged 14, was admitted to Conrad Brunner's wards at Zurich for a fracture of the left radius, which had occurred three weeks previously. The 14th day after the fracture the child observed that he could not stretch the fingers of his left hand; his parents noticed that when he walked his body was bent forwards. The symptoms became more and more marked, and the child was sent to hospital. Symptoms of tetanus, risus, trismus and emprosthotonos were marked. On examining the patient, there was evidence of a fractured epiphysis of the radius, badly reduced, and a bulky callus just below the articulation. The parts were exposed by incision, when it was found that there was pressure on the radial nerve by new formation attached to the callus. The compressed nerve was set free and the prominent portion of the radius resected. The symptoms of tetanus slowly disappeared. Three weeks after the operation the patient was well. (*Paris correspondence of British Med. Journal*, July 3rd, 1886.) I on one occasion saw a case of tetanus where the post-mortem examination showed in sole of foot a small piece of leather (thrust into foot by a nail), and near this an abscess the size of a pea surrounding the terminal filament of a nerve.

The nervous theory, however, does not account for all the cases. For instance, in those cases where tetanus follows decomposition in a wound. Such a case lately came under my notice at the Montreal General Hospital. A man had two of his fingers crushed, and at the end of a week presented himself for surgical treatment. The fingers were in a gangrenous condition and horribly foetid. Amputation was immediately performed, but next day tetanus developed, of which he died in a week. Chloral was employed in full doses without effect. In such a case as this the theory of M. Gauthier is applicable, viz., that certain chemical changes, the result of decomposition, ensue, and the products are certain animal alkaloids or leucomaines, which produce symptoms like those of poisoning by strychnine or some other vegetable alkaloid.

At the 15th annual congress of German surgeons held recently in Berlin, Rosenbach of Göttingen read a paper supporting the germ theory of tetanus, and gave the results of a number of experiments performed on guineapigs and mice. (*Med. News*, Aug. 7, *Med. Record*, June 5th, and *Centralblatt f. Chirurgie*, No. 24, 1886.) A man was received into the Göttingen clinic suffering from tetanus consequent on gangrene of the feet. Rosenbach took some small pieces of tissue, an hour after death, from a part of the foot below the line of demarkation, and put them under the skin of the thigh of two guineapigs. The animals soon became tetanic. From these, other guineapigs were inoculated in a series, one from the other, and then the virus was transferred to mice. All the animals inoculated ultimately died of tetanus, the most marked symptoms being spasm of the extensors of the tail and of the hind legs. In the inoculation material Rosenbach discovered a bristle-shaped bacillus similar to that described as the cause of earth tetanus; this he successfully cultivated in coagulated serum. He was not able to obtain pure culture of any single bacillus, but he succeeded in causing tetanus with this mixed bacillus. The bristle-shaped bacillus was always obtained in conjunction with the bacterium of putrefaction. However, as the latter alone does not cause tetanus, he thought it only reasonable to attribute the production of tetanus to the bristle-shaped bacillus. Rosenbach thinks the experimental result is important from its correspondence with the fact that tetanus in human beings is apt to follow putrefactive wounds. The next thing to find out is the origin of this bacillus; in this connection it is interesting to note that Nicolaier and Flüge, whilst investigating the micro-organisms of garden soil, discovered that a culture of a certain form of bacillus found in it when injected into rabbits, guineapigs and mice caused symptoms like tetanus as well as malignant oedema. In regard to the mode of propagation of this bristle-shaped bacillus and infection of the whole system, Nicolaier found it in the sciatic nerve once and in the spinal cord twice. Rosenbach found it twice in the spinal cords of rabbits that had been inoculated. In Rosenbach's cases the inoculation period was not less than 24 hours or more than 36.

In the discussion which followed the reading of this paper, König stated that the experimental tetanus produced by Nicolaier and Rosenbach in animals was identical with that which occurred in man and that which not unfrequently occurs after castration in horses. In these the spasms often began in the muscles of the extremities and back. In man, tetanus does not always begin with trismus, but there is, sometimes, first spasm in abdomen or extremities and muscular rigidity at the point of injury. Socin said that he also had produced tetanus by the inoculation of garden-earth, which was undoubtedly true tetanus. Ebermann (St. Petersburg) thought that the presence of ptomaines might explain the occurrence of tetanus.

The tendency of the present day is to attribute every disease to some special form of germ, and tetanus has not escaped; even senile gangrene has its special bacillus. The germ theory of tetanus is by no means proved by the experiments of Rosenbach; the weak point in the theory is the very small number of these bristle-shaped bacilli that have been found throughout the body. The germ theory does not account for those cases of idiopathic tetanus that are occasionally seen (especially in young females), due to such causes as shock, fright, and injuries where there has been no wound of the skin. Other cases, again, support the theory that tetanus is due to some form of infection. Betoli relates the case of three slaves who died of tetanus after eating the flesh of a bull which had succumbed to the same disease. (*Quoted in New York Med. Record*, June 5th, '86.) The affection does not follow immediately on receipt of the injury, but only when certain putrefactive changes have ensued; the theory of leucomaines would apply here.

Whatever be the cause of tetanus, it is most probable that it is due to irritation of the nerves of the periphery, which is propagated along the trunks to the medulla; this is inferred from the peculiar symptoms and occasional recovery after administration of full doses of narcotics. Whether the irritation is due to bacilli, leucomaines, or something else, at the present stage of our knowledge of the pathology of the disease it would be a difficult matter to determine. More experiments are needed to convince

the profession that the cause has been discovered in the bristle-shaped bacillus. It would also be interesting to know why dark races are more often affected than white, and why the disease is more prevalent in warm climates.

Verneuil (*Bull. et Mém. de la Soc. Chir. de Paris*, T. XI, p. 438), in speaking of tetanus, says: 1, Tetanus, as a complication of wounds, has not materially diminished with the introduction of antiseptic surgery; still, on the whole, the prognosis has from year to year improved, and recovery is no longer looked upon as a miracle. 2, Failing a precise knowledge of the ætiology of the disease, treatment is of course empirical, but recovery can be looked for only by the use of narcotics which destroy sensation and tactile irritation. 3, Of all the remedies, chloral is undoubtedly the best; good results now follow the use of opium and its derivatives. Chloral and morphia together, properly administered in full doses and given continuously, afford better results than any other remedies. 4, Tetanus is a cyclical affection, having a varied course, average duration being three weeks. 5, Indication for treatment continues throughout the disease, and remedies must be administered without intermission. Frequently the fatal result is due to irresolution and frequent change of remedies. (*Quoted in Centralblatt f. Chirurgie*, No. 30, '86.)

Dr. M. L. Moreau (*Alger Médical*, Jan. and Feb. 1886) reports a case with symptoms of tetanus cured by rest, sedatives and electricity. Patient had trismus and opisthotonos. He recovered in four days (?), during which period morphia and chloral were given in full doses, the patient kept thoroughly at rest, and was enveloped in cotton wool. The patient was of a neurotic temperament, and to obtain relief from his pain he covered his body with needle punctures. M. Moreau looked upon the case at first as one of hysteria, but on careful watching came to the conclusion that it was more allied to tetanus.

There is no doubt that many of the reported cases of rapid recovery from tetanus by morphia, chloral, etc., are cases of hysteria. I have seen several such which were diagnosed as true tetanus and yet recovered rapidly. The diagnosis of hysteria was confirmed by the attacks recurring at intervals of several months.

Treatment of Stricture by Electrolysis.—At a meeting of the Royal Medico-Chirurgical Society of London held in May last, Dr. Steavenson and Mr. Bruce Clarke contributed a paper on the treatment of stricture of the urethra by electrolysis (*Lancet*, May 29th, '86). The more extensive use made of electricity in surgery and gynaecology abroad, and especially its successful employment in the treatment of stricture of the urethra, induced the authors to undertake a series of observations to test the accuracy of the reports which had reached England. Their results bore out in every particular the reports of successes received from America. Electricity, on account of its power of splitting up compounds into their chemical elements, can be used as a substitute for ordinary caustics to the human body. It can be applied with success to parts difficult of access, such as the male urethra and the uterine cervical canal. Its effects would be limited to the points touched by the electrode. The caustic effects could be arrested or not commenced until the applicator, in the form of the electrode, was *in situ*, and the direction and extent of the caustic action was entirely under the control of the will of the operator. The authors gave the details of six cases of stricture of the urethra treated by this method. The advantages of the operation were as follows : There was usually no bleeding. If hemorrhage did occur, it was accidental, and usually showed that too strong a current had been used. No anæsthetic was required. If pain or discomfort were produced, it was trifling. The patient could, in the case of slight strictures, pursue his occupation during treatment. No antiseptics were required, as the process itself was aseptic. In the majority of cases there was no contraction or return of the stricture. Eschars produced by caustic alkalies were said to heal with less contraction than wounds produced in any other way, and electrolysis with the negative pole of a battery was a means of applying the same destructive action as was caused by caustic alkalies to parts difficult of access in a way which was impossible by any other method. Probably other chemical decompositions and contractions take place at the negative pole besides those characteristic of the caustic alkalies, but they have not up to the present time been thoroughly made out.

In the discussion which followed, Mr. Berkeley Hill said that, like the American cases, there was too little detail as to the existence, size and nature of the stricture ; moreover, the final results had not yet been observed. He mentioned a case of stricture $2\frac{1}{2}$ inches from the meatus, in which he had used this method, and observed the action with an endoscope. After applying the instrument 15 minutes there was an increase of one millimetre in the diameter of the urethra, but even this was not maintained, and after subsequent applications, with great narrowing of the stricture, other methods of treatment had to be employed. Altogether, he felt sceptical as to the real result of this method of electrolysis.

Mr. S. Edwards related a case of stricture where he could only introduce a filiform bougie, when by electrolysis he increased the diameter of the urethra so much as to be able to pass a No. 24 pewter instrument.

Mr. Buckstone Browne felt certain that several of the cases enumerated would not have needed internal urethrotomy, and could have been successfully treated by gradual dilatation.

Like all new-fashioned methods of treatment, the results reported are very favorable, and there are no failures. The method of treatment of stricture by electrolysis was introduced by Dr. Newman of New York about two years ago, when he published a paper on *Tabular statistics of one hundred cases of urethral stricture treated by Electrolysis without relapse*. Little detail was given, and the fact that all the cases were completely successful makes one suspicious. No doubt many of the strictures were such that any ordinary treatment would have availed. I know that some specialists in urethral surgery never fail to find stricture in every case examined, even if it needs a No. 25-30 instrument to detect it, and they cut every case, with the best results, of course, and without any relapses. But are they as successful in cases of true stricture, which are of long standing, and will admit, perhaps, only a No. 1 catheter or a filiform bougie, and where there is a quantity of indurated tissue about the seat of stricture ? It seems incredible that when a lot of tissue is destroyed by electricity that no scar tissue forms as the results

of healing ; how is the solution of continuity caused by the electrolysis restored ? In one case reported by Mr. Clarke, rigors occurred. Dr. Newman apparently had no ill results at all following his operations. Urethral fever was never met with. This seems almost too good to be true, and if the results were not so invariably excellent, and one or two relapses had occurred, this method of treatment would have inspired more confidence. The method of operating is as follows : A gum-elastic or celluloid bougie, with a wire running down to the centre and terminating in a metal end from the electrode ; this being connected with the negative pole, is held gently pressed against the stricture, and should be of a size larger by two or three mm. than is the stricture itself. To the positive pole is attached a pad electrode, which is placed over the sacrum, the patient lying on it. The battery used is Stoehrer's 30-cell. A current strength of from 5 to 8 milliampères is found requisite, and is gauged by means of a galvanometer.—(*S. Edwards, Annals of Surgery*, August, 1886.)

Surgical Treatment of Scrofulous Glands of the Neck.—Last year appeared a small book containing two clinical lectures on “*Scrofulous Neck and the Surgical Treatment of Scrofulous Glands*,” by Dr. Allbutt and Mr. T. Pridgin Teale, both of Leeds. In these lectures the authors dwelt on the importance of early surgical interference in enlarged scrofulous glands of the neck, and a number of cases were reported in which this method of treatment was successfully employed. In cases where sinuses existed and the gland was broken down, the diseased structure was scraped out with a sharp spoon. These gentlemen were not the first to advocate or to perform extensive excision of scrofulous glands of the neck, but by the publication of their lectures they drew the attention of English and American surgeons to the subject. At the International Medical Congress held in London in 1881, these gentlemen also, in an able paper, announced their views on the treatment of scrofulous glands, which, in short, were “to radically extirpate every caseous gland and so quench promptly the smouldering fire.” Since the introduction of antiseptic surgery, operations in the neck have become

much more common and enlarged glands have been removed with impunity. I have myself removed as many as 30 to 40 enlarged glands in the neck at one operation, with the best results. The patients, as a rule, recover rapidly. The removal, after the first incision along the posterior border of the sternomastoid, should be effected by the fingers, aided, occasionally, with a few cuts of the knife. In many cases, although the glands from external manipulation may seem only enlarged and not softened, in turning out the deeper ones they are often found quite caseous. Care should be taken not to operate on a patient affected with lymphadenoma, and to avoid this mistake the glands in other situations (than cervical) should be examined, and also the spleen. Where there is a persistent elevation of temperature, without suppuration sufficient to cause it, it is better to delay operating.

The advantages of removing scrofulous glands are : 1, Freeing the patient from a tedious and exhausting local disease, which disfigures. 2, Removal of foci of infection, and so, perhaps, preventing general tuberculosis. 3, Improving the general health of patient by early removal.

In the *Lancet* of June 19th and 26th is a paper by Mr. Kendal Franks of Dublin "*On the nature of Scrofulous Glands in the Neck and their Surgical Treatment.*" After speaking of the connection between tuberculosis and scrofulosis, and stating his belief in their identity, he says that tuberculosis of the cervical glands was shown to be the result of the entrance of the tubercle bacillus at some contiguous abraded part, and most cases could be traced to some local affection, as eczema of the head, ulcers in the mouth, sore throat, etc., all of which afforded a nidus for the bacillus. The constitutional peculiarity, the "vulnerability of tissue," was a most important factor in determining a proper soil for the development of organisms, and much depended on the dose of the poison received as to the future progress of the case. Three courses were open to the gland to pursue : 1, Death of the bacillus and consequent resolution ; this was unusual. 2, Suppuration and expulsion of the tuberculous virus ; this might occur in one gland after another, and

was of common occurrence. 3, The extension of the disease along the course of the lymphatic glands, and if this were not arrested, subsequent generalization of the disease. Mr. Franks urged that surgical measures should be guided by our present knowledge of the dangerous nature of the disease, that constitutional measures which should be used in all cases should not be trusted to exclusively, once the diagnosis as to the tubercular nature of the disease was established. He referred to three surgical measures as being the best, each of which was applicable to its own class of cases :—

1. *Scooping* should be confined to cases in which a sinus already existed, or in which a superficial abscess was connected with a caseous gland beneath the cervical fascia.

2. *Cautery Puncture*, recommended by Treves, was most applicable to softened caseous glands which had formed extensive adhesions.

3. *Excision*, which had the widest applicability, was chiefly suitable in cases where the glands were still hard and movable. It was applicable to extensive disease as well as to more limited cases ; but he urged that it should be employed early, when practicable, before softening or adhesions were formed. It was then possible to eradicate the disease through a small opening and thus save the patient from extensive operation subsequently, or, if that were not resorted to, to a prolonged and exhausting process of suppuration.

Mr. Fred. Treves, in an article on “ *Rest in Treatment of Scrofulous Neck* ” (*Lancet*, June 5th, 1886), strongly advocates the necessity of rest in the treatment of scrofulous neck. He says that, as a rule, scrofulous affections of the neck run a very chronic course, and are very obstinate in their relation to treatment. He attributes this to the fact that the neck is a part of the body that is in constant motion. When there is a glandular affection of the axilla, groin, etc., rest is enjoined, but the need for rest in affections of the neck is overlooked. He would suggest the employment of rest as a routine measure in the treatment of every case of scrofulous neck, it should supplement all other local procedures, and among them hold a predominant place.

To obtain rest, he advises the employment of a splint, which he figures. It may be of felt, and takes its fixed point from the shoulders and back. The centre of the splint is strengthened by a slender strip of metal. This strip is carried up along the back of the neck, and at the occiput meets a cross piece which is moulded to the outline of the skull. The cross piece is kept in place by a narrow ribbon that encircles the forehead. In young girls and women, the cervical part of the splint can be entirely concealed by the hair. The splint in children and in males may be secured by straps. In adult females, it may be more conveniently attached to the stays. The felt is freely perforated, and the whole apparatus is very light. This apparatus keeps the neck still, but not rigid. It is not worn at night. Mr. Treves has had the best results from this method of treatment, and uses it not only for scrofulous necks, but for keeping the neck quiet after operations.

After discussing the cause of enlarged glands, and condemning the use of local applications, such as ointments, iodine and other remedies to the enlarged glands, while the cause of enlargement still exists, such as coryza, ozæna, eczema, diseased teeth, tonsillitis, etc., he goes on to say that the affection may be occasionally primary, and he has seen enlargement follow blows or result from a definite exposure to cold. He reviews the general management of the affections, advising sea air, cod-liver oil, etc., and then goes on to speak of local treatment, when he makes the remarkable statement that "excision with the knife, so far at least as the neck is concerned, can be rarely practised." Excision, he says, is only suitable in those cases where a "solitary gland or a small well limited cluster of glands persists obstinately after other manifestations of scrofula have disappeared." Operations upon larger clusters of glands, even where the individual tumors appear quite free, are often exceedingly dangerous. The glands are found on exposure to be less movable than they appeared, to extend deeply, and put in danger the great vessels and nerves or the dome of the pleura if obstinately pursued with the knife. He further says, "Extensive operations of this kind appear to me to be rarely justifiable." Of course Mr. Treves

prefers his own cautery-puncture, which, he says, is an admirable method of treatment for large softened glands superficially placed. He also advocates scraping out diseased glands where sinuses exist, and advocates the opening of strumous abscesses and other collections of pus in the glands by cautery-puncture.

I cannot agree with Mr. Treves in his remarks on excision of glands of the neck. My colleagues and I, at the Montreal General Hospital, have frequently removed numbers of scrofulous glands from the neck with the best results. The patient has always borne the operation well, and has rapidly improved in general health afterwards. We have never had any bad results follow, or any accidents occur during the operation, although in some cases the dissections were most extensive. Having never employed cautery-puncture, I cannot speak from present experience, but I should fancy that in the treatment of deep-seated glands its use would be much more dangerous than the knife.

Treatment of Aneurism by the introduction of Steel-wire into the Sac.—Last February Dr. Cayley brought before the London Medico Chirurgical Society a case under his care, in which Mr. Hulke had introduced 40 feet of steel wire into the sac of an aortic aneurism, with the result that the portion of tumor acted upon became solidified. Three important points were established by this case: 1, That the introduction of foreign substances into aneurisms is usually easy. 2, That, so far as present experience goes, this proceeding appears to involve very little danger when it is carefully carried out. 3, That only nine cases in which this operation has been performed have yet been published, so that our experience of it is far too limited to warrant any conclusion as to its real value.—(*Lancet*, July 17th, '86, p. 120.)

In the number of the *Lancet* above alluded to is a very interesting report of a case of aneurism in St. Bartholomew's Hospital under the care of Mr. Howard Marsh. The aneurism appeared to be one of the carotid, just as it emerges from the chest. After consultation, distal ligature was proposed and agreed to. Mr. Marsh operated on December 19th, 1885, and tied the carotid on the level of the cricoid cartilage. He divided

it between two kangaroo tendon ligatures. On dividing the vessel the lumen was found entirely filled with a firm clot adherent to the arterial coat and apparently of some age. The healing of the wound progressed favorably till the 21st, when the patient was suddenly attacked with difficulty of breathing. Later on he grew worse, his face became dusky, and he seemed in a dying condition. On being propped up, however, he seemed to breathe more easily, and his condition improved. The swelling at the root of the neck increased, and it was determined to introduce some foreign body into the sac. On the 10th of March, having selected a point a little removed from most prominent part, where the skin was unaltered, he passed a fine trocar and canula about an inch and a half into the aneurism sac and then withdrew the trocar. No flow of blood followed. A fine probe was then passed through the canula for a distance of fully three inches ; it entered readily, but still no blood escaped. He endeavored then to pass some horse hair, but could not do so. A probe was introduced again, and was felt to be moving round in a cavity, but still no blood escaped. The canula was now withdrawn. No bad result followed the operation. Some time afterwards a small abscess formed in front of the aneurismal sac, which was opened. Through this the aneurismal wall gave way, and the patient died five days subsequently of hemorrhage. At the post-mortem, a large aneurism of the arch of the aorta, involving the lower part of the carotid, was found. Mr. Marsh remarks, in connection with this case, that there is always great *primâ facie* probability that an aneurism at the root of the neck will prove to be connected with the aorta rather than with that of the vessels which are derived from it. In this case, distal ligature of the carotid was useless, because the vessel was already occluded. The canula and trocar never fairly entered the blood-stream, but evidently became entangled in clot ; this, of course, prevented the introduction of the horse-hair.

Splenectomy.—At a meeting of the Royal Medico-Chirurgical Society, held in April last, Mr. Knowsley Thornton read a paper on two cases of splenectomy (*Lancet*, April 17th, 1886). This paper contained a detailed record of a case of splenectomy for

cystic spleen in a girl aged 19. The pedicle was ligatured with silk and the ligatures cut short. The operation was performed with full antiseptic precautions. The patient made a complete recovery, and is now in better health than before the operation. Another case of splenectomy for hypertrophy of the spleen was also related. In this case there was retraction of a small artery from the middle loop of the three ligatures, with hemorrhage into the omentum and remarkable general oozing, and cyanotic condition of the patient, who apparently rallied from the operation, but died from internal hemorrhage in five hours and a half. Tables of 11 successful and 23 unsuccessful splenectomies, with 4 successful partial splenectomies, were appended, with remarks on the causes of success and failure. All the cases in which leukæmia was present were fatal, and operations under these circumstances are, the author contends, unjustifiable. Credé had collected most of the cases in von Langenbeck's Archives. Splenectomy for hypertrophy of the organ was not so favorable for operation as wandering spleen and cystic disease of the organ. Mr. W. Haward's case had been included in the table; it happened in 1881, and was one of leukæmia. So far as he knew, the girl was now in a good state of health, and menstruating normally; as a house and parlor-maid, she performed a fair amount of hard work. In one of the successful cases the woman bore a child after the operation. In another case, the woman was in good health nine years after the splenectomy.

Mr. Thornton stated that it was interesting to observe that in his successful case the girl acquired an enormous appetite; also, that the reason that operations for leukæmia were so unfavorable was that the blood in these patients coagulated with great difficulty, and there was a proneness to hemorrhage. The President, Mr. Pollock, narrated a case of a man who died two days after a large hemorrhage into the legs.

Successful Nephrectomy on a patient of 23 months.—Dr. Rosswell Park of Buffalo reports the case. (*Medical News*, May 22nd, 1886.) The right kidney was removed, exhibiting fibro-cystic degeneration. The operation was performed by abdominal section in right linea semilunaris. Child made a good

recovery. Dr. Park remarks that his patient is the youngest who has ever survived nephrectomy. The abdominal incision was not made from choice, but necessity, the tumor being altogether too large for removal in any other way.

New and Original Method of Dressing.—Dr. C. W. Strobell, in the *New York Medical Record*, June 26, 1886, has devised a new and certainly original method of dressing. He surrounds the wound with a thin glass globe so constructed as to fit closely to the part, and provided with openings for drainage tubes. The advantages are that the wound can be looked at without removing the dressings; that it is isolated from sources of infection, as the globe can be hermetically sealed, etc. The author gives no less than seventeen reasons, for which I have not room here, why this method of dressing should commend itself to the profession.

Treatment of Orchitis and Epididymitis.—Mr. Fred. W. Lowndes (*Lancet*, July 24th, 1886) says that the practice suggested by Mr. Furneaux Jordan he has found most beneficial, and has followed it for the last eleven years. The affected testicle is painted with a strong solution of nitrate of silver (two drachms to one ounce), at the same time rest in bed is strictly enforced, and the inflamed organ is supported on a pillow to prevent it hanging down. When the patient is obliged to follow his occupation, the cure is slower, as complete rest cannot be obtained by suspensory bandages, etc.

Enucleation of Eyeball, with Transplantation and Reimplantation of Eyes.—Dr. C. H. May (*Medical Record*, May 29th, 1886) gives an interesting account of this operation. The operation was first performed by Dr. Chibret, 4th May, 1885, when the eye of a rabbit was put into the orbit of a girl æt. 17, from whom the eye had just been removed for disease. The operation was a failure. Next, Mr. Terrier performed transplantation June 15th, 1885; sloughing of cornea resulted on the third day. M. Rohmer performed the third transplantation June 22nd, 1886; the cornea sloughed on the seventh day. The next transplantation was performed by Dr. H. W. Bradford of Boston (*Boston Med. and Surg. Journal*, Sept. 17, 1885).

He sutured the remains of the optic nerve of a patient to the optic nerve of the rabbit's transplanted eye. On the 18th day "conformation and tension was good, cornea clearing, and allows iris to be seen; ocular movements in all directions good." M. Terrier performed a second operation, Oct. 19th, 1885, after Dr. Bradford's method; the operation was a failure. So out of five cases four were failures. In four, rabbits' eyes were used, and in one a dog's eye. After giving a summary of the results obtained, with a study of the changes taking place in the transplanted organ, the author describes a number of experiments (24) of transplantation of eyes in rabbits, of which a full report is given, and to which I refer the reader. In many cases the cornea, which was clear up to the 15th or 16th day, sloughed on exposure to light.

Treatment of Angioma.—Dr. R. Campana has found multiple punctures, followed by the application of lint and dried perchloride of iron, of great service in the treatment of small capillary angiomas. For 24 hours after the operation there is a superficial reaction in the form of an erythema, but by the second or third day the part treated becomes pale. If one operation is not sufficient, it is to be repeated. In one case of angioma cavernosum upon the face of a child, he effected a cure in one month by galvano-cautery.—(*La Salute*, 1885, Nos. 9 and 10; quoted in *Jour. of Cut. & Ven. Diseases*, April, 1886.)

Treatment of Clubfoot.—Mr. Robt. W. Parker (*Brit. Med. Jour.*, July 3rd, 1886) writes an interesting paper on the above subject, and gives a brief abstract of the anatomy of club-foot. He, in conjunction with Mr. Shattock, made a number of dissections of club-feet, mostly in still-born children, and came to the conclusion that the deformity was not caused by paralysis or a spasmodic contraction of certain muscles, for after all the muscles were removed the deformity would persist, and could not be overcome till some of the ankle and tarsal ligaments had been divided. The neck of the astragalus generally, but not always, had an exaggerated inclination inwards and upwards. The ligaments chiefly at fault he found to be those placed on the inner border of the deformed foot, viz., the anterior portion of the in-

ternal lateral ligament of the ankle joint, the astragalo-scapoid and calcaneo-scapoid ligaments, all three being blended into one indistinguishable capsule of great strength. These ligaments being the chief cause of the deformity, he advocates their division. The chances of relapse are lessened, and the time necessary for rectification of a severe talipes much shortened by division of these ligaments. The ligament most needing division is quite subcutaneous, and extends from the tip of the internal malleolus across the astragalo-scapoid articulation, on to the internal cuneiform bone, and loses itself in a fibrous expansion on the fore-part of the inner border of the foot. The extent and direction of the fibres which chiefly oppose rectification of the foot can be felt with the finger-tip when traction is made on the inverted foot. A curved tenotome is entered immediately in front of the anterior border of the internal malleolus, the blade being kept between the ligaments and the skin, and the cut made by turning the knife against the ligament and cutting till all resistance ceases—in fact, till the bone is reached. The foot is placed in a plaster boot, which is left on for a week or ten days, and after this, manipulation, etc., may be commenced. Mr. Parker does not pretend that this treatment cures club-foot any more than tenotomy, but he holds that with proper after-treatment it hastens rectification. He does not think division of the tendons is needed in all cases.

Treatment of Fracture of the Patella.—Mr. Fred. Treves (*Brit. Med. Journal*, July 24th, 1886) says that the methods of dealing with this common injury are not yet entirely satisfactory, and that the discussion on the subject is not yet closed. There are certain cases where the fracture is transverse, and where the fibrous expansions by the side of the bone are untorn, that present so little disturbance of parts that the mere securing of the limb in the straight position is sufficient to get a good result. In other cases, good results are obtained by strapping or splints. The application of Malgaigne's hooks, applied to felt discs moulded over the fragments, has met with certain success.

Lister's operation of opening the joint and suturing the broken

fragments has been practised extensively by some surgeons. According to Mr. Treves, the objections to this operation are an anæsthetic is required and the operation is not without risk, and also one median suture is not always sufficient. Another plan is that where no skin incision is used, but a silver wire is passed through the joint under the fragments, and is so adjusted that when the two free ends are twisted together over a pad on the skin the broken bones are brought together. This plan has proved very successful in the hands of several surgeons. The mode of treatment, however, advocated by Mr. Treves is the old one by the use of Malgaigne's hooks; he says that, theoretically, it is difficult to conceive a better means of bringing the fragments of the broken patella together. When first introduced, the objections to Malgaigne's hooks were due to the fact that the points of the hooks excited suppuration, and as the points of the upper hooks always pierced the synovial member, suppuration often spread to the joint. Antiseptic surgery has removed this reproach, and with the disappearance of this condition must vanish the objections to this excellent method of treatment. According to Mr. Treves, the other advantages are that no anæsthetic is required, the maintenance of the apparatus causes no inconvenience, and before the hooks are inserted the fluid in the joint can be evacuated. Mr. Treves' method is as follows: The limb is secured on an ordinary straight back-splint with a foot-piece, which is secured to the leg by straps and buckles. The position of the patella is carefully marked out in pencil on the skin, and the sites for the points of the hooks indicated; four punctures are now made with a sharp tenotome at the points at which the hooks are to enter; the punctures in each case should pass down to the bone. The two upper punctures enter the joint, and any fluid can be evacuated through them; the lower punctures are without the joint. The hooks should be aseptic, and the upper and lower ones applied separately, the first introduced being the lower. They should then be screwed together till the fragments are in close contact. To prevent riding of the upper fragment, a tube passing over the upper pair of hooks and fixed under the knee with a leaden clamp should be applied.

Mr. Treves always applies the hooks under the spray, and administers no anæsthetic. After the hooks are accurately applied the spray is withdrawn and the punctures covered with iodoform. The limb should be placed on an inclined plane, and the knee should be kept always fully exposed to the air. This, he thinks, hastens healing. The hooks are usually left in for six weeks. In the cases treated by Mr. Treves, no elevation of temperature, pain or suppuration has occurred, and the union was in all cases firm and secure.

New Operation for Fractured Patella, by subcutaneous patellar wire suture.—Prof. Anton Ceci of Genna (*Deutsch. Zeitsch. f. Chir.*, Bd. XXIII., Nos. 3 and 4, 1886) advocates the following method of treating fractured patella: The effused fluid is first removed by aspiration, and, if it be large, the joint washed out afterwards, or a splint may be applied and the operation deferred for three or four days. The operation is performed with the help of a drill, perforated at the end with an eye. An assistant holds the limb of the completely narcotized patient in hyper-extension, approximating the two fragments of the patella and moving the skin in folds towards the centre of the patella. The operator then pierces the skin with the drill under the patella, and forces it diagonally through the substance of the patella, keeping it parallel to the large surface of bone, transfixing it in an oblique direction from the inner part below, upwards and outwards. The point passes through the skin above, the eye is now threaded with silver wire, and is then retracted and pulled through the patella and out at the first point of insertion. The operation is then repeated in the other diagonal line of the patella, but at right angles to the first perforation, having previously passed the wire under the skin and the lower margin of the patella to the lateral aspect of the bone. The end of the wire is again passed under the skin above the upper margin of the patella, and finally the two ends are twisted tightly together, and the twisted part is buried. The assistant must hold the fragments in apposition unmoved throughout the operation, and care must be taken not to get the wire tangled or twisted into loops. The skin having been moved out of place

during the drilling, the perforations are removed from the wire, when the tension is relaxed. The wire lies to a great extent buried in the substance of the patella, in the figure 8 shape.*— (*Annals of Surgery.*)

Hardly a year passes without the introduction of a new method of treating fracture of the patella or the introduction of an old one. The last method introduced is fashionable for a time, and then falls into disuse and is forgotten, to be revived again at some future time as something better than anything else. There is no doubt that the good result of treatment depends considerably on the kind of fracture and the amount of injury and effusion. Good results may be obtained by various methods, and each one has its failures also. Lister's method of treating fractured patella in the hands of men who have not fully imbibed the principles of antiseptic surgery has led to the loss of not a few legs and some lives. Philadelphia surgeons have for some time past used Malgaigne's hooks in much the same way as that advocated by Mr. Treves, and they say the results obtained are excellent and the danger nil. Professor Ceci's method appears so complicated that few will attempt it, and, besides, the advantages do not appear to be very great. For several years past I have adopted Mr. Heath's method of treatment by aspiration, if there is effusion, and then the application of a plaster-of-paris bandage. The results obtained are good, and in the last two cases, in which the plaster was applied within an hour of the receipt of the injury, the union after several months was particularly close. The method has these advantages: it is safe, simple, and can be applied by medical men in the country (who have not the appliances of a hospital at hand) with the greatest ease. The materials are always ready, and take but little time and skill to apply.

Surgery of the Brain.—At the recent meeting of the British Medical Association held at Brighton, Mr. Victor Horsley read a paper entitled "*Advances in the Surgery of the Central Nervous System*" (*Lancet*, Aug. 21st, 1886, and *Brit. Med.*

* Other methods of treating fractured patella are fully discussed in the Retrospects of June, 1882, and December, 1883,

Jour., Oct. 9th, 1886). In introducing the subject, the author laid special weight on the fact that all the advantages, both scientific and operative claimed in his paper, were the results of lessons learned from experiments on monkeys, a fact worthy of noting in these anti-vivisection days. It had been said that monkeys were not quite like human beings, but this was not correct from a surgical standpoint. The chief facts of the paper are as follows: (1) The preparation of the patient for the operation, which consisted in shaving the scalp and then thoroughly cleansing the head. (2) Anæsthesia; he preferred chloroform, giving first a hypodermic of a quarter of a grain of morphia—the morphia produces contraction of the arterioles of the brain, and there is in consequence less oozing, and a less amount of chloroform is needed. (3) Strict Listerism, pure and simple, spray and gauze dressings. (4) The line of incision—instead of the old-fashioned crucial flaps, a semi-lunar incision was advocated, as being easily pushed out of the way of the later steps of the operation, as less likely to suffer from interference with the blood circulation, and therefore with the vitality of the flap. (5) The use of large trephines—it is difficult to hit the exact spot, and yet so necessary to have ample room, that the old small trephines are comparatively useless. (6) MacEwen's plan of replacing the bone. The bone, after removal, should be preserved in hot carbolized sponges, cut up into small pieces and placed in the opening between the dura mater and the scalp. The brain being exposed, the first question to decide is whether it bulged into the opening or not. Normal brain, Mr. Horsley said, never bulges at first, but if the operation lasts for an hour or more, some bulging becomes evident. If the brain bulges at first, it is presumptive evidence of the presence of a tumor; a yellowish color and venous congestion are likewise suggestive points. The lesion being found, how is it to be treated? The use of the actual cautery leads to secondary troubles, so he prefers to use a knife to excise the necessary structures. There is generally considerable oozing at first, and if so, a sponge should be pressed into the incision. The tumor or diseased part having been removed, the wound should be closed as quickly and as accurately

as possible, as primary union of the flaps was almost essential to success. Drainage is required for 24 hours only ; if more serum collects after this, a small probe should be passed in to let it out, but a little tension does no harm, as it keeps the brain matter in its place until cicatrization is complete. Hernia cerebri only occurs as the result of decomposition. Mr. Horsley, at the Brighton meeting, showed three patients on whom he had operated. They had recovered from the operation, and were well enough to travel. The chief clinical symptoms in these cases had been epileptiform fits. Two of the cases following injury, with subsequent scarring of the convolutions. The third case was one of tumor, which was accurately localized by the manner in which the fits invariably commenced. In two of the cases the wound healed by first intention in four days, and in the third in seven days. In the tumor case, half an inch of surrounding cerebral tissue was removed.

In the discussion which followed the reading of the paper, Prof. Charcot (Paris), after congratulating Mr. Horsley on his brilliant success, said the patients exhibited might be taken (1) as new proofs of the value of the legitimate use of animals for purposes of experimentation, and (2) as confirmation of the doctrines of localization of the functions of the brain.

Mr. Hughlings-Jackson thought that every person with epileptiform seizures was the subject of a very localized lesion of some kind, either a tumor or otherwise. If the aura were very localized and constant, it was in favor of tumor. He would, however, recommend an operation, even if tumor were not present. He had changed his views with regard to double optic neuritis, for tumors could exist without it. He thought that in removing the tumor the adjoining portions of the brain should be removed, for the tumor produced fits by altering that portion of the brain on which it was seated. He would cut out too much rather than too little. Unfortunately there would occur cases with more than one tumor in the brain, or with more than one tumor on one side of the brain.

Since this paper was read, Mr. Horsley has had another successful case of operation for brain tumor (*Brit. Med. Journal*,

Oct. 2nd, 1886). The patient was a man who had been absolutely hemiplegic for a month, and had passed into a semi-comatose condition; before these symptoms developed he had endured terrible pain in the head, and had suffered from fits. On the 23rd of September last Mr. Horsley trephined over the motor region of the right hemisphere, and after enlarging the aperture made by the trephine, succeeded in removing a large tumor from the brain. The tumor weighed $4\frac{1}{2}$ ounces, was 3 inches long, 2 inches broad, and 2 inches deep. On the day after the operation, the patient was perfectly rational and even amusing in his conversation, and said he was quite free from pain. On September 27th the wound was entirely healed, and the man had recovered some power in his legs.

The results obtained by Mr. Horsley are certainly most brilliant, and with proper antiseptic precautions the operation of trephining the skull and incising the brain does not seem to be a specially dangerous one. The improvements introduced by Mr. Horsley in the treatment of the wound are valuable, especially the previous thorough cleansing of the scalp and the semilunar incision. Mr. Horsley has also established by these successful operations that the repair of wounds in the lower animals does not differ from that in the human subject, a point which was, till quite recently, disputed. He has also proved that great benefits may be conferred on the human race by properly conducted experiments on the lower animals, these operations being the direct results of experiments performed on the brains of monkeys.

For further information about Mr. Horsley's operations, we refer the reader to the paper published in full in the *British Medical Journal* of October 9th, 1886. In connection with this abstract, the reader is advised to consult the Retrospect for June, 1885, where the early operations on the brain are described and a valuable paper on the "Operative Surgery of the Brain," by John B. Roberts, M.D., in the Transactions of the American Surgical Association for 1885.

The Danger of Wounding the Diaphragm in Operations for Empyema.—M. Lagrange says (*Archives Générales de Méde-*

cine, Sept. 1886) that wounding of the diaphragm in operating for empyema is an accident the conditions of which it is necessary to know in order to avoid. He holds that it is a mistaken idea to suppose that the accident is rare, and cites cases in which it occurred when the 7th intercostal space was opened, and Kirrison on one occasion found the diaphragm as high as the 6th intercostal space. This anomalous position of the diaphragm may be caused by adherence of that structure to the lung, with retraction of the lung or retraction of the parietes of the thorax, with consequent exaggeration of curve of the diaphragm; and it is a mistake to suppose, as is stated in the text-books, that pleural effusion is always accompanied by descent of the diaphragm. In many cases it is impossible to tell the exact position of the diaphragm, especially when it is intimately adherent to the thoracic walls. He advocates strongly that the operation of opening the pleura for the evacuation of pus should never be performed lower than the 5th intercostal space. Cases are recorded where the diaphragm has been wounded, and even the abdominal cavity opened and some of the contained viscera incised. At the Montreal General Hospital it has been the custom of late to open the pleural cavity low down, not uncommonly in the 8th and 9th spaces. I myself have frequently done this, and without any untoward result. The diaphragm can always be felt through the incision. It is a good plan, and one which I have always adopted, after cutting through the tissues down to the pleura, to use a dressing forceps, if nothing but pleura intervenes it is easily perforated, and pus immediately exudes, but if diaphragm should be present, the forceps cannot be pushed through it without the exercise of considerable force, and the condition may be recognized before harm is done. The value of a low opening is very great, because we thus thoroughly empty the pleural cavity and run no risk of leaving the narrow posterior portion filled with pus. If the opening be made high up, this cavity cannot be thoroughly evacuated without washing out with some fluid, a proceeding which always complicates the operation, may introduce septic matter, and retards healing.

Limits of the Pleura.—In this connection a paper by Mr.

W. A. Lane, which appeared in the April number of the *Journal of Anatomy and Physiology*, is interesting. Mr. Lane says that the lower limit of the pleura, behind, can be determined clinically by measuring the lower ribs, especially the 12th. If the 12th ribs are under two inches in length, the pleura may not even reach their upper margins, as the length of this rib increases, the pleura extends still lower down, and in some instances may reach a point $1\frac{1}{2}$ inches below the lower border of the rib. Laterally the lower limit of the pleura crosses the 7th costal cartilage obliquely three-quarters of an inch below its articulation with this rib, then the end of the 8th rib, the 9th rib a quarter of an inch above its extremity, the 10th three-quarters of an inch above, and the 11th one and a half inches from its outer end. In the axillary line, Mr. Lane found that in the majority of cases the lower limit crossed the 10th space or the 11th rib, not unfrequently lower on one side than the other, but not much more frequently on one side.—(*Medical News*, Oct. 23rd, 1886.)

Final Results of Operation for Cancer of the Lip.—In the *Centrallblatt für Chirurgie*, June 19th, 1886, there is an interesting series of statistics relative to the efficacy of operation for cancer of the lip, collected by Dr. A. Wörner from Prof. Braun's clinic at Tübingen and from other sources. Of the 305 cases in Tübingen, one in nine occurred in women. The average age was 62 years. Fifty-one of the cases occurred in inveterate tobacco smokers; traumatism was the cause in eleven cases; neglected warts in seven cases. In only sixteen was the upper lip affected. Three hundred and fifty-four operations were performed on 277 patients. In the greater number a V-shaped incision was sufficient to remove the disease. In 28 cases, excision of the maxilla was necessary. Of the 277 patients operated on, the disease recurred in 111; 87.2 per cent. recurred within a year; 12.7 per cent. after the lapse of one or more years. In one case the disease returned nine years after the operation. The growth was again removed, and the patient lived eleven years without a relapse, and died finally of old age. Of the 277 cases, 89 (or 32.13 per cent.) were still living with-

out a return of the disease at an average period of 5.8 years after excision ; and 71 (or 25.63 per cent.) had died of other affections at an average period of freedom from relapse of 8.4 years after operation. Of the whole number of 160 cases, 106 lived over three years. The mortality from the operation itself amounted to 5.77 per cent. Wörner also compares the previous reports on this subject made by Thiersch, von Bergmann, Billroth, Kocher, etc. In all, 866 cases. Of the whole number of recurrences, 87.6 occurred in the first year ; 244 (or over 28 per cent.) were free from a return after three years.

These results are certainly encouraging, and the fact that in so large a number of cases there is no return must encourage surgeons to strongly advocate operation, even in advanced cases, with the view of prolonging life. If there be a recurrence, it is generally within a year. If the patient passes three years without recurrence, he is tolerably safe.

Stomach Operations performed at Prof. Billroth's Klinik from 1880 to 1885.—*Gastrotomy* : One case ; this was done on a patient aged 19 for the extraction of some teeth : patient recovered in five weeks. *Gastrorrhaphy* : Two cases ; both died. In one, the operation was performed for rupture of the stomach after a plentiful meal ; death occurred from collapse in four hours. In the other, from a gunshot wound in a woman aged 63 ; death from peritonitis and collapse in twenty-eight hours. *Gastrostomy* : Four cases. In one for œsophageal cancer, the result of swallowing a caustic alkali ; death on the ninth day from inanition. In the second, for carcinomatous stricture at the cardiac orifice ; death one month and a half after operation from croupous pneumonia. In the third and fourth, for the same reason as the second ; one died in twenty-four hours from inanition, the other in eighteen days from the same cause. *Gastrectomy* : Eighteen cases, of which eight recovered and ten died. These cases were, 14 pylorectomies for carcinoma, with 6 recoveries ; 1 pylorectomy combined with gastro-enterostomy, death in four months from a return of the disease ; 3 pylorectomies for cicatricial stenosis, with 1 recovery ; 1 partial resection of pylorus, followed by death. In all, 25 cases, with 9

recoveries.—(*Glasgow Medical Journal*, Aug. 1886 ; quoted in *Medical News*.)

Treatment of Erysipelas.—Dr. Haberkorn (*Centralblatt für Chirurgie*, No. 19, 1886) speaks highly of the internal administration of benzoate of sodium. He thinks it a most useful remedy in all infectious diseases, especially the exanthems. In erysipelas, he gives it in doses of from 4 to 5 drachms daily, in mucilage or seltzer water. In nearly every case the temperature fell to normal in 48 hours. No local applications were used. The number of cases treated was nearly fifty, and none resulted fatally. Dr. H. asks surgeons to make a trial of this simple remedy.

Disinfection of the Hands.—Dr. Kümmell (*Centralblatt f. Chirurgie*, No. 17, 1886), after detailing the various results arrived at by himself and others in connection with this point, describes a series of experiments recently made by himself in order to determine the different extent of cleansing that was necessary after being exposed (1) to ordinary sources of dirt, and (2) to special sources, such as post mortems, etc. The general results are as follows : 1, After ordinary washing with soap and water, the hands were placed in a bacterium-growing medium, and growths of fungi and bacteria were observed. If the hands had been specially infected, they were capable of affecting a gelatine medium at least a week afterwards. 2, Almost all power of infection was removed from the hands by a three minutes' washing and brushing with potash soap and hot water, followed by disinfection with carbolic acid (3 per cent), chlorine water (50 per cent.), or sublimate solution (1 per cent.) Of these solutions, chlorine water appears to be the most efficacious. When, however, the dirt of a post-mortem has to be got rid of, the scrubbing must be longer continued, viz., for five minutes, and it is better to employ a powerful potash soap, after which a 5 per cent. solution of carbolic acid should be used and the hands thoroughly soaked in it, and then brushed with a good nail-brush and soap again. If sublimate solution is employed, the 1 per cent. is usually, but not invariably, satisfactory. It is most important to get the hands into such a condition by wash-

ing with soap and water that the disinfectant can obtain ready access to all the cracks and crevices. The water should be as warm as the hands will stand, and the arms should be bared and thoroughly washed as well. It is well to bear in mind that the clothes, as well as the hands, may be sources of infection, and that all attempts should be made to prevent their acting as a source of trouble as well.—(Quoted in *Practitioner*, July 1886.)

Intubation of the Glottis.—Dr. Ingals states that he has employed intubation as a substitute for tracheotomy in two cases of membranous croup, and although both patients died, he is favorably impressed with the possibilities of the tubes. The operation can be done easily, it is free from danger, it so promptly relieves serious symptoms, that Dr. Ingals thinks that it will soon become a recognized treatment among general practitioners. “Looking at the intubation of the larynx from our present standpoint, it seems well adapted to the following cases: (1) For diphtheritic and croupous stenosis of the larynx occurring in children under $3\frac{1}{2}$ years of age. (2) For cases of the same affection in older children in which, from any cause, the physician wishes to defer the operation of tracheotomy. (3) For those cases in which consent to tracheotomy cannot be obtained. (4) For those cases in which proper nursing could not be secured. (5) For severe cases of spasmodic croup in children under 10. (6) For simple stenosis of the larynx (not diphtheritic) in children. (7) With proper sized tubes, it might be of value in the treatment of the various forms of laryngeal stenosis in adults.—(*Journal of American Medical Association*, Feb. 6th, 1886.)

Lanolin in Skin Diseases.—Dr. Stern (*Deutsch. Med. Woch.*, No. 15, 1886) states the experience of this remedy obtained in Behrend's Poliklinik at Berlin. An useful ointment should possess certain qualities. It should not be too rapidly absorbed. It must cling to the surfaces for some time, since there the pathological changes exist which are to be removed by its use. It should therefore stand between substances which are too quickly absorbed and those which are not absorbed at all. The officinal Ung. Diachyli unites these peculiarities in a very perfect manner, for on the one hand it permeates the epidermis, and on the other

it remains a certain time on the surface. These render it specially suitable for the treatment of eczema. An excellent modification of this ointment is as follows: Emp. Plumbi, simp. Lanolini, āā 50.0; Adipis, 10.0. This ointment shows portions of the salve still present on the skin several days after application. On suitable localities a daily application of this ointment is unnecessary; several cases of eczema of the hands healed quickly when the salve, spread on cloth, was not changed oftener than once in three days. Two preparations have been used in seborrhœa capitis; a lanoline cream: Cetacei, 10.0; Ol. Olivæ, 30.0; Lanolini, 40.0; Aquæ, 50.0, and a lanolin pomade: Lanolini, 50.0; Ol. Theobromæ, Adipis, āā 5.0; Tinct. Benzoin, 3.0; Ol. Etheriæ Ejusd. gutt. ii. With these the scales disappeared with remarkable rapidity, but sufficient time had not elapsed to determine if the cure was permanent. In a case of psoriasis eruption, too, after eight days' use of lanolin cream, the redness had much diminished, and the tendency to bleeding, on scraping the patches, had much lessened, and, indeed, such a marked improvement in the condition generally of the scalp had taken place as to raise hopes that the complaint might thus be quickly caused to disappear. A 5 per cent. chrysarobin lanolin salve, on the contrary, did not appear to exert a more favorable effect on the eruption of psoriasis than the simple one of lanolin. The special advantage of lanolin as a basis for ointments over those previously in use seems to be its long persistence on the surface of the skin, combined with its simultaneous retention in the epidermis.—(Quoted in the *Edinburgh Medical Journal*, Nov. 1886.)

Treatment of Skin Diseases by Muslin Plasters.—The muslin plasters with a gutta-percha basis which Dr. Unna introduced are recommended by Hofmann. He prescribes (1) boracic acid plasters for ulcers of the legs and bed-sores; (2) chrysarobin plaster, which has the advantage of combining the irritating action to the point of application; (3) in milder cases of dry circumscribed eczema, zinc plaster; (4) for severer forms of eczema, zinc tar plaster; (5) naphthol plaster for affections attended with itching; (6) for softening thickened layers of

epidermis, salicylic and salicylic-mercurial and salicylic-cannabis plasters,—these can also be used to advantage in sycosis, lupus, and severe case of acne ; (7) for rheumatic affections, ichthyol plaster ; (8) resorcin plaster, employed with good results in arthritis urticaria acute and in ingrowing toe-nails ; (9) in various inflammatory processes, mercurial-carbolic plaster.—(*Deutsch. Med. Woch.*, No. 51, 1885 ; quoted in *Practitioner*, Aug. '86.)

Healing under Blood-clot.—Schede of Hamburg, at the recent meeting of the congress of German surgeons, read a most interesting paper on the above subject. (*Medical News Editorial*, Sept. 26th, '86.) Since the general use of antiseptics it has been frequently observed that the presence of a clot may not do any harm, that, in fact, the clot may become organized. Observing this fact, Schede has boldly made use of the blood poured out into a variety of surgical wounds to secure a protecting covering, which has the advantage of doing away with the necessity for drainage or compression. In Phelps' operation for club-foot (open division of all contracted soft parts, down to and including the astragalo-scaphoid ligament), he found that if he simply covered the gaping wound with a bridge of protective silk, placed over this a good antiseptic dressing, and secured fixation with plaster bandages, he could leave the wound to itself without concern, and that, after three or four weeks, there would be solid cicatrization, or only a narrow strip of granulation or a little strip of leather-colored clot still attached along the middle, as the sole remains of the large mass of blood which filled the wound immediately after the operation. In this way not only does the skin unite, but all the soft parts (muscles, tendons, ligaments) assume their normal functions. In manner similar to this, Schede found a very large number of operations to heal without mishap. Of these he gives a list comprising 241 operations, including 40 resections of joints, with 37 typical recoveries ; one resection of a piece of the wall of the thorax as large as the palm of the hand, with typical healing ; 18 operations in which he chiselled out tuberculous foci in bones, with free opening of the joint, all with typical healing ; 29 cases of removal of necrosed bone, with 27 typical recoveries ; 20 open operations for

club-foot, all with typical healing ; 10 operations of scraping off of fungous granulations of the sheaths of tendons, with suppuration in two cases only ; 24 cases of removal of tumors, with slight suppuration in two. In one case he saw a large blood-clot become organized in the lacerated brain after a severe complicated fracture of the skull. The method pursued in securing these extraordinary results was, where possible, to employ Esmarch's bandage, to observe the most scrupulous asepsis, and to remove every portion of diseased tissue. Large wounds were closed with sutures placed at such intervals as to leave only one or two openings about half an inch long to permit the escape of superfluous blood into the dressing. In some cases a counter opening was made for the purpose. Schede found that the skin united well over considerable cavities, such, for example, as are left after an operation for necrosis. No drainage-tube was used. The wound was covered with a piece of protective for two purposes : first, to secure complete filling of the wound with the blood-clot, and, second, to keep this moist by preventing its absorption by the dressings, which were only intended to absorb the excess of blood. Over all was placed a thick antiseptic dressing of sublimate gauze and cotton and sublimate moss bags. It is important, in order to secure filling up of the wound with blood, that when a counter opening is made, it shall be at the highest point, instead of, as usual, at the lowest. When no large vessels were involved, and the bleeding was not profuse, no notice was taken of it. Perfect asepsis is indispensable to Schede's method. If any doubt exists as to having secured it, he advises filling up the wound with antiseptic material, such as iodoform gauze, sublimate gauze, or bismuth, and leaving it till granulation is established, after which the filling of the wound with blood can be secured by shaving off the granulation, and thus the cure will be materially hastened.

This method should answer well in cases of resection of joints, as ankle and elbow, and, in fact, is the same method of healing as takes place in cases of severe compound fractures, where the wound, after thorough cleansing, is immediately closed. The difficulty will always be in securing perfect asepsis.

Trephining in cases of Bleeding from the Middle Meningeal Artery without Fracture of the Skull.—Prof. Krönlein, in a lecture published in the *Deutsche Zeitschrift für Chirurgie*, Band XXII, Hft. 3 and 4, points out that trephining in cases of rupture of the middle meningeal artery without fracture of the skull is one of the most satisfactory operations of surgery with regard to certainty and promptness in removing a very serious danger to life, and when performed under antiseptic conditions, to freedom of the operation from risk. During the last three years Prof. Krönlein has trephined in four cases where he had diagnosed rupture of the middle meningeal artery. In every case the diagnosis was confirmed, and there was always found a considerable supra-dural extravasation of blood in the region of the middle meningeal artery on the side of the operation. In two of the cases the hæmatoma was found and removed at the time of the operation; in the other two cases the hæmatoma was not found till after death. The first two mentioned cases recovered. Prof. Krönlein says there are many forms of hæmatoma from rupture of the middle cerebral artery, but most of these may be referred to one of two types—either that of a *diffused hæmatoma*, in which the extravasation of blood is very abundant and spread over the whole concavity of the affected side of the skull, or that of *circumscribed hæmatoma*, which may, however, be of considerable extent, but in which some portion of the dura mater on the affected side of the head remains attached to the bone. This latter variety of hæmatoma is sharply defined at its periphery, is oval or round in form, and frequently is most thick at its central part. The most frequent situation of circumscribed hæmatoma is the middle segment of the skull. The high vulnerability of the temporal region, together with its free supply of large arterial vessels, explain sufficiently the fact that this is most frequently the locality of intra-cranial hemorrhages.

In discussing the proper seat of the operation in trephining for hemorrhage from the middle meningeal artery, Krönlein points out that, though the application of the trephine at the seat of election for ligature of this artery in its continuity, viz.,

over the anterior inferior angle of the parietal bone, will expose any diffused hæmatoma and the temporo-parietal and fronto-temporal varieties of circumscribed hæmatoma, the posterior or parieto-occipital variety is not accessible at this spot. The rule, therefore, is laid down that when dangerous hæmatoma of the middle meningeal artery has been diagnosed, and no trustworthy indications of the precise locality of the extravasation are presented, either on the scalp or the cranial vault, trephining should be performed at the above-mentioned seat of election. Should this operation, however, fail to detect any collection of blood, the surgeon, if still holding by his diagnosis, should again trephine, and with the expectation of exposing a parieto-occipito hæmatoma, penetrate the skull immediately below the parietal eminence. The following directions are given for determining the proper places on the surface of the skull for the application of the trephine: A line is drawn from the upper margin of the orbit backwards along the side of the head and parallel to the horizontal line of the head (a line drawn from the auditory meatus to the lower margin of the orbit). In this line should lie both orifices made by the trephine, the anterior being between three and four cm. (about $1\frac{3}{4}$ inches) behind the external angular process of the parietal bone, and the posterior at the crossing of this line by a vertical line drawn directly upwards immediately behind the mastoid process. A second trephining, which, if made under proper antiseptic conditions, is not likely to subject the patient to any additional danger, is said to be indicated for the purposes of better removal of coagula and also of drainage in cases of diffuse hæmatoma reaching from the frontal bone to the occipital protuberances.—(*London Med. Record*, Oct. '86.)

Ever since Sir Charles Bell demonstrated that a blow on the side of the head, not producing a fracture, could separate the dura mater from the skull at the point of injury, and that this separation was followed by hemorrhage due to the tearing of branches of the middle meningeal artery or the main artery itself, surgeons have endeavored to save the life of the patient by trephining the skull for the purpose of arresting the hemorrhage and removing the effused blood. The cases operated on,

as a rule, ended fatally until within the last few years, when antiseptic precautions were introduced and the actual risk of the operation reduced to a minimum. Cases of meningeal hemorrhage are by no means uncommon, and scarcely a year passes without the daily press recording many deaths occurring after injury to the head, and due, unmistakably, to meningeal hemorrhage. As a rule, these cases expire before they come under the care of a competent surgeon, and the patient is allowed to die without any attempt being made to save his life by operative measures.

Only the other day a case occurred near here, where a young man fell a short distance and struck his head ; he was senseless for a few minutes, and then recovered sufficiently to walk some distance to his home. After going to bed he gradually became unconscious, and died comatose next day. I read in the daily papers a short time ago of another case. A young man was going to his room in his hotel, and whilst passing along the corridor was struck on the head with a cane by a person who was in a semi-drunken state. He felt a slight pain at the time, but went to bed, and next morning was found dead. Both these proved to be cases of rupture of the middle meningeal artery without fracture of the skull. They might have been saved by the operation of trephining performed in proper time.

Dr. F. G. Dennis (*Medical News*, Nov. 13, 1886) says :—
 “The presence of symptoms of cerebral irritation followed by unilateral paralysis, with a slow tense pulse, the Cheyne-Stokes respiration, accompanied by a sudden rise of temperature due to disturbance of the heat centre, form a group of symptoms which, if they were preceded by a short interval after the injury in which no serious manifestations of brain lesion were present, make it extremely probable that an intra-cranial meningeal hemorrhage has occurred.”

In such cases the surgeon who did not trephine would be guilty of gross negligence of duty, and although many of the cases could not be saved, still a sufficient number would recover to justify operative measures being undertaken in all cases where meningeal hemorrhage is suspected.

Relation of Modern Surgery to Medicine.—During the late meeting of the German Scientific Medical Association, held at Berlin, Prof. von Bergmann delivered an address on the above subject (*Brit. Med. Journal*, January 15, 1887). Prof. Bergmann dwelt on the extraordinary progress made by surgery during the last few years, and said that it now leads medicine, and that the relationship which exists between medicine and surgery should be examined afresh. “Such disturbances and ruptures now threaten the peace of the great medical family that it becomes necessary to examine and settle new claims and ancient titles of possession.” He drew attention to the fact that the scientific development of ophthalmology “had brought the treatment of eye diseases to a degree of perfection far beyond the reach of any other branch of surgery. All national differences in ophthalmology have ceased and their place has been taken by one method and one school.” General surgery now claims a similar position in virtue mainly of its newly acquired ability to invade, with comparative impunity, regions of the body hitherto looked upon as sacred from the knife. Though the enormous strides surgery has made during the last decade are not the effect of a blind empiricism, but of a clearer insight into the processes of nature; practice in this field has always been in advance of theory. Alphonse Paré tied arteries one hundred years before the discovery of the circulation of the blood. “The consideration that impelled Lister to adopt the antiseptic treatment had only the value of an hypothesis, which surgeons examined solely in regard to its practical consequences, until other and non-surgical experiments and results established this hypothesis on solid foundations.”

The two chief principles on which the surgery of the present day is based are : (1) That all wounds necessarily heal of themselves by virtue of a natural tendency in that direction; and (2) that this tendency is only altered by external influences, to which alone all inflammation and suppuration are due. Only those wounds are fatal which prevent a vital organ from continuing its functions, with less serious injury the surgeon can now deal with success. There is no special vulnerability of

tissue of any organ ; age and even disease make no difference. "The flesh of a man 80 years old heals as well as that of a boy of 8, and operations on feverish consumptive patients are now as successful as those performed on patients in perfect health."

Surgery now aims at extending its ancient limits ; and misled by the success of surgery, medicine is tempted to have recourse more and more to operative measures. There is now the surgery of the brain, of the lungs, of the kidneys, of the stomach, and gall-bladder. There is more or less rivalry between medicine and surgery in the cure of disease, but further progress in surgery can only take place through an increased knowledge of internal medicine. Surgeons must now avail themselves more of the accurate means of investigation which we owe to the physicians—auscultation and percussion, thermometry, chemical, microscopical, and electrical investigation. As long as internal medicine remains the guardian of scientific methods and scientific principles, so long will it remain the parent tree of which surgery is only a branch.

The few infectious diseases against which surgery is now armed are, however, but a small fraction of the plagues and pestilences which afflict mankind ; numerous as were the victims of powder and shot in the struggle between France and Germany, that was the first war recorded in history in which they were not exceeded by the multitudes who fell a sacrifice to disease. It is to the better knowledge of the causes of disease that the success of both medicine and surgery is due. Medicine had isolated the group of infectious diseases, and had shown that the infectious material was reproduced in the body long before surgeons recognized all disturbance of a wound to be due to inoculation from without, and set themselves to prevent that occurrence. Surgical measures are now directed against the entrance of microphytes into the body at the surface, but numerous workers are engaged in seeking for means to destroy them after admission within the body. The study of these elementary organisms may throw more light on the vital elements of complicated organisms than the biology of the latter themselves. "At least we are no longer inclined to assume that the lowest microbes behave in

a manner essentially different from the higher plants and animals. On the contrary, the physiological chemist now seeks in the fundamental structure of all living matter a single original chemical organization from which all its properties may be deduced in common."

It follows from what has been said that surgery owes all its recent development to clinical medicine, and just as the antiseptic treatment is the product of careful observation in etiology, so the energetic procedures of internal surgery will have successful results only when firmly established by the methods of clinical medicine, otherwise surgery will sink in the hands of expert specialists to a mere display of manual dexterity.

Two instances may be given of the importance of testing the widest possible view of the surgical art. The course and limitations of tuberculosis cannot be so well grasped from the study of internal organs as from those surgical diseases which we know to be due to the presence of some morbid material. These comprise various affections of the skin, the lymphatic glands, the bones and joints, and observation of them has thrown new light upon the most important phenomena of tuberculosis. Again, the revelations made by surgery as to cancer are not less important; they have shown that this scourge is at first not a general disease of the whole system, that it has nothing to do with poisoning of the blood or juices, but is always purely local in its commencement. Thus, when viewed in its proper aspect, surgery, far from stealing from medicine, enlarges the boundaries thereof, and Prof. Bergmann's eloquent and suggestive address will be of service in defining the relationship between the two, and insisting upon the pursuit of clinical surgery as an integral part of scientific medicine.

Treatment of Cysts of the Thyroid.—At a meeting of the Clinical Society of London, held on January 14th, 1887, Mr. Mayo Robson of Leeds read a paper on the above subject. (*Lancet*, Jan. 22nd, '87.) He advocated antiseptic incision and stitching the edge of the cyst to the skin, scraping out the interior of the cyst and draining for a short time under an antiseptic dressing, then packing with zinc lotion and lint. He read

notes of two cases thus treated. The first that of a young woman aged 22, who had a cyst the size of a small orange over the trachea which occasionally produced dyspnoea; the second in a woman aged 24, in whom the right lobe of the thyroid was forming one large cyst. In both, the above treatment was perfectly successful, and produced no constitutional or local disturbance. When seen some time afterwards there was very little trace of a scar and no tumor in either case. He considered the usual operations of injections, setons, etc., dangerous and unsatisfactory, and thought the advantages of this method were its simplicity, safety and certainty.

In the discussion which followed, Mr. Christopher Heath remarked that Mr. Robson had said nothing about hemorrhage, which he knew from personal experience could be pretty severe from the interior of the sac. He did not know the reason for this, but the injection of perchloride of iron and plugging with strips of lint soaked in the perchloride succeeded very well in arresting hemorrhage.

Dr. S. Mackenzie had examined many microscopical preparations of these cysts, and the thin-walled vessels were exceedingly numerous. Iron was better than iodine to stop hemorrhage.

Mr. Clutton never thought it necessary to suture the cyst to the skin. In some cases of plugging the opened cyst, high fever developed; the use of iodoform gauze obviated this tendency. The suture of the skin had an objection, in that it might cause the sinus to remain open, as in one case which continued three years. He would prefer complete excision to scraping its walls.

Mr. Bryant supposed that Mr. Robson did not claim that free incision was a new treatment, but that stitching the capsule of a cyst to the skin was. If this were not adequately done septic matter might escape into the subcutaneous tissues. The fear of hemorrhage would be an argument in favor of laying the cyst open and making a sinus. In a case of puncture of a cyst, free incision and plugging were required to stop hemorrhages. He considered scraping out the interior of the cyst bold practice.

In reply, Mr. Robson stated that he practised sufficient scraping to separate all colloid material, but not to extend deeply into the wall of the cyst.

Operative Treatment of Goître.—Dr. C. Garré of Bâle, assuming that total extirpation of the thyroid gland cannot at the present day be regarded as a justifiable operation, directs attention to a modified operation that has been performed for some years past by Professor Socin, and with very satisfactory results in about fifty cases. This operation consists in intra-glandular “shelling out” of the degenerated portions of gland, and is similar in its mode of performance to procedures previously adopted by Juillard, Rottman and others. In a very large proportion of cases of goître submitted to operation, the disease of the gland occurs in the form of circumscribed masses, each of which is separated from the healthy and normally acting portion of the thyroid structure by a capsule of more or less thickness. If the surgeon in operating is able to clearly distinguish this natural limit, the procedure of shelling out is practicable, but there is a difficulty in making out this capsule with precision. If the diseased mass be situated near the surface of the thyroid the covering layer of glandular structure presents the appearance of very thin membrane. If this be left undetermined, and the dissection be commenced and carried beyond it, more and more of the proper gland structure is removed, until at last the operation becomes one of typical unilateral or even total removal of the gland. If, on the other hand, the diseased mass is deeply embedded in the gland, it was necessary to work through a thick layer of very vascular thyroid structure before the boundary of the disease is clearly indicated by the presence of a bluish transparent capsule traversed by but few vessels, the bleeding, though sometimes profuse, is simply venous. It is held to be an important point to keep close to the capsule, and not to begin the “shelling out” of the disease before this has been found. Two or more goitrous masses may be thus removed from a thyroid gland by one or more incisions without wounding any large vessel. The bleeding, as a rule, is unimportant, and can be corrected by compressions. The cavity left after removal of the disease is then drained. In not one of the fifty cases operated on by Professor Socin were any symptoms of tetanus observed. There need not be any fear of subsequent cachexia strumipriva, as

only the diseased and degenerated portion of the gland is removed.—(*Centralblatt für Chirurgie*, No. 45, 1886, and *Lond. Med. Record*, Dec. 1886.)

Relation of Cachexia Strumipriva to Removal of the Thyroid.—A discussion on this subject took place at the Berlin Scientific Congress, in which it was sought to ascertain whether the myxœdematous condition always supervened upon complete removal of the gland. It seems most probable that those cases in which this condition was not observed are to be ascribed to the fact that either the thyroid gland was not completely removed or else some accessory gland in the neighborhood so far supplied its place that no bad consequences supervened.—(*Central. f. Chirurgie*, Oct. 30th, 1886, and *Practitioner* for December, 1886.)

Ligature of the Superior Thyroid Arteries for Goître.—At a meeting of the Imperio-Royal Society of Medicine in Vienna, held on the 5th November, 1886, Prof. Weinlechner presented a woman, aged 33, who had suffered from goître from infancy. It had latterly interfered much with respiration, so on the 8th of October last she entered hospital in a very serious condition, face was livid and dyspnœa was so great that extirpation was indicated. The left side of the tumor was as large as one's fist, and the right a little smaller; the upper portions of each half of the tumor were supplied by superior thyroid arteries as large as normal carotids. The right carotid was enormously dilated. The voice had been harsh since infancy. Prof. Weinlechner, not wishing to extirpate the tumor on account of the great amount of oppression, followed the example of Woelfler and ligatured the two superior thyroid arteries. Immediately the murmur ceased in the arterial trunks and carotid, the lividity of the face disappeared, the dyspnœa diminished, and the patient was considerably better. But the same day she had severe spasms of the upper and lower extremities and convulsive movements of the hands. The head and face did not participate in these spasms. The brain at first was not very clear, but soon became normal. These spasms were not repeated, and the patient continued to improve. The circumference of the tumor

diminished $3\frac{1}{2}$ inches in 24 days. In Woelfler's case the circumference of the tumor after ligature of the superior and inferior thyroid of one side diminished in seven months $3\frac{1}{4}$ inches. The success in this case is very satisfactory, and if the patient had not insisted on extirpation Prof. Weinlechner would not have done it. If the right lobe hereafter enlarges, it is intended to ligature the inferior thyroids as well.—(*La Semaine Médicale*, Nov. 10, 1886.)

Treatment of Syphilis.—Prof. Neumann of Vienna (*Wiener Med. Blatt.*, Nos. 33-36, '86), who has had an immense experience in treating syphilis, says that the preventive treatment or treatment of the primary sore and enlarged glands by constitutional means is without result, and the only effect it had is to postpone the secondary rash. The local affection should, of course, be treated as the phymosis, gangrene, etc.

Of all the methods of treatment, that by mercury is the best. Prof. Neumann does hold with those who treat constitutional syphilis expectantly, because, according to his experience, (1) its duration is inordinately long, (2) the individual is always a focus of infection for those about him, and (3) more severe forms of syphilis appear under the expectant than any other method of treatment. The author sounds a note which cannot be too often sounded when he says that after apparently complete recovery from the affection there are still stored up in the body diseased conditions which can only be got rid off by an anti-syphilitic treatment.

The extirpation of the primary sore and enlarged glands is of no use in the author's opinion. In one case where he removed the primary disease twenty days after infection, the general disease appeared seven months after.—(*Central. f. Chirurgie*, No. 3, 1887.)

Cocaine—This drug, which has of late been so extensively used in minor operations, has caused in certain cases, when administered in large doses, serious symptoms, and which on one or two occasions the cases have terminated fatally. Not long ago, in St. Petersburg, a celebrated surgeon committed suicide in consequence of one of his cases having died from the effects

of cocaine. When applied about the rectum, a much larger dose appears to be required than when used elsewhere. Twenty to thirty grains injected hypodermically have proved fatal, and much smaller doses have produced alarming symptoms.

Dr. W. E. R. Wood (*Australasian Med. Gazette*, Aug. '86) gives the following instance of the effects of an overdose of cocaine used hypodermically. Four minims of a 20 per cent. solution of cocaine were injected into the cheek of a man for the relief of toothache. At the time of making the injection, Dr. Wood believed he was using a 10 per cent. solution which had been used on the patient with good effect previously. Within five minutes patient became restless and inclined to vomit. He then began to feel a sensation of pins and needles in the left hand, and which rapidly extended to the right side. This was speedily followed by contraction and rigidity of the fingers, arms and legs, and a tendency to opisthotonos. Pulse rapid and feeble, and muscles of mouth and cheeks strongly contracted. His respirations were short and convulsive, his feet and hands very soon became cold, and profuse perspiration set in. After the use of heat to surface and stimulants internally, his pulse began to improve and his color return, but it was not till five hours had elapsed before all symptoms had subsided.—(*Practitioner*, Nov. 1886.)

Treatment of Varicose Veins.—In an editorial on the above subject in the *Philadelphia Med. News* for January 15th, 1887, the writer, after speaking of excision of varicose veins, and saying that it is a simple, safe method, and one that is almost sure to effect a cure, speaks of the plan of injecting into varicose veins various coagulating substances, and says that this plan still holds its ground and may be adopted in cases in which either the patient or the surgeon does not wish to face a cutting operation.

Surgeon-Major Stevenson, in the *Lancet* for Oct. 23rd, 1886, reported eight cases treated by the injection of pure carbolic acid with very good results. The circulation is controlled by an Esmarch's bandage applied round the thigh (the patient standing). The bandage is applied at first just tight enough to

occlude the veins, and then firmly enough to cut off all the circulation. One minim of pure carbolic acid is injected at a number of points about an inch and a half apart, and cotton and collodion are applied over each puncture. The Esmarch bandage should not be removed until fifteen minutes after the completion of the last injection, and then the circulation is permitted to return only very gradually. For at least a week after the operation the patient should not assume the erect position or put his foot to the ground at all. This, of course, is to avoid the danger of an embolus being swept into the general circulation. Good results have been obtained by this method of treatment, although abscesses form at the seat of injection in about 10 per cent. of cases. The abscesses are small and painless. Weber reports in the *Medical Record* for Dec. 12, 1885, a successful case, where he injected a varicose saphenous vein with four drops of pure carbolic acid at four different points. while the vein was compressed above and below the points injected till a coagulum formed. This method, which was introduced by Watson Cheyne, appears to be safe as well as successful. The injection of carbolic acid into piles was practised for some years as a secret method, and when tried by the general profession the results were not as good as the method at first promised.

New Radical Operation for Hemorrhoids.—At a recent meeting of the New York Surgical Society (*Medical News*, Feb. 12, 1887) Dr. Lange stated that in mild cases he had obtained good results by injecting equal parts of glycerine and pure carbolic acid. In severe cases, complicated with prolapse of the mucous membrane, he had adopted a method of operation that was to be commended not only on account of its facility and completeness of the cure, but because of the fact that it is not followed by suppuration and necrosis of the tissues. It consists in excising the entire affected portion of mucous membrane and in suturing the edge of the remaining part to the integument. The essential advantages are the perfectly aseptic character of the process and the small loss of blood. An incision is carried around the anal orifice at the point of junction of the skin and mucous mem-

brane, the parts being put on the stretch. The incision is carried down till it reaches the sphincter. The mucous membrane is then separated from the sphincter as far as necessary. In this way the entire degenerated portion is isolated, and so far as the arterial blood supply is concerned, remains connected with healthy tissue only by the vessels which supply it. A number of buried sutures of catgut are now inserted close to one another between the base of the external flap and that of the separated mucous membrane; these do not include any of the fibres of the sphincter, neither do they penetrate the rectum. If the stitches enter the sphincter, the patient suffers from severe tenesmus. The sutures may be continuous or interrupted, and secure nearly all the vessels. The mucous membrane is excised in parts at a point from a half to one centimeter above this line and the cut edges approximated by silkworm gut. After the third day the patient is allowed to have a passage of his bowels daily, and is kept on liquid diet for a week. He will be able to attend to his business at the end of the third week.

Reunion of Cut-off Toes and Fingers.—Dr. N. Ilinsky furnishes details (*Vratch*, No. 29, 1886, p. 538) of two cases of the kind. A boy aged ten hacked off the second phalanx of his left great toe, the part remaining connected only by means of a thin bridge of plantar skin. The patient being seen three hours later, the wound was disinfected and sewed with three sutures and an antiseptic dressing applied; complete union with restoration of sensibility and fairly free movement took place in thirteen days. Another patient, a tanner, aged 45, cut off the nail-phalanx of his left forefinger, the part being connected only by means of a very dirty and rough strip of palmar epidermis. The patient powdered his wound with soot and came to Dr. Ilinsky about five hours after the accident. The injury was treated as in the former case. On the third day after suturing, the man managed to hurt his injured forefinger, and even to dislocate the hewn-off part. It was again restored to place, and two weeks later was thoroughly united.—(*London Med. Record*, p. 529, December, 1886.)

Cerebral Surgery.—Prof. Greenfield, in a patient recently

under his care in the Edinburgh Royal Infirmary who presented somewhat obscure cerebral symptoms, made the diagnosis of abscess in the anterior part of the left temporo-sphenoidal lobe. At his request, Mr. Francis M. Caird trephined and evacuated two ounces of foetid pus from the brain. The wound was completely healed in 18 days, and the man regained his health.—(*Brit. Med. Jour.*, Feb. 5th, 1887.)

Surgery of the Brain.—A short account was given in the Retrospect for December, 1886, of Mr. Victor Horsley's admirable paper on *The Surgery of the Brain*, read before the last meeting of the British Medical Association. A glimpse of what has been done since Mr. Horsley read his paper will not prove unprofitable. The advance in this department of surgery has been rapid. Mr. Victor Horsley has operated in ten cases, with one death from shock. Dr. MacEwen of Glasgow has had three successful cases, and many others have had one each. In many of the successful cases the prognosis without operation was inevitably fatal. There are yet great difficulties in diagnosis of brain cases, and the surgeon not only looks to clinical medicine for further light on the subject, but experimental physiology, as, notwithstanding the vituperation so abundantly showered on vivisectionists, the functions of different parts of the brain have been determined chiefly by experiments on animals.

Cerebral Abscess in connection with Disease of the Ear.—The connection between mastoid disease and cerebral abscess has long been recognized, but only very lately have attempts been made to treat such cases surgically. So far very few successful cases are recorded. In addition to the ones quoted below from English literature, Truckenbrod (*Zeitschr. f. Ohrenheilk.* XV, 1886) reported a case of abscess from mastoid disease operated on by Schede of Hamburg. In this case a discharging sinus was enlarged, the dura mater exposed and punctured, and an abscess the size of a small orange evacuated. Ogston in 1876 (*Brit. Med. Journal*, Dec. 2, 1876) trephined for cerebral abscess consequent on otitis media and evacuated nine ounces of pus between the skull and membranes. Perfect recovery ensued. Here the brain was not opened. Schondorff's case

was not one of true trephining (*Archiv Klin. Chir.*, Bd. XXXI, 1885). A fistula which followed acute purulent inflammation of the middle ear was enlarged, pus evacuated, and the opening afterwards drained. No incision into the abscess was made.

The operations reported by English surgeons are much more brilliant than any of the foregoing. The diagnostic accuracy displayed in two of the cases and the masterly manner in which the operations were planned is worthy of imitation. In the *British Medical Journal* for December 11th, 1886, Dr. W. R. Gowers and Mr. Arthur E. Barker report a successful case of "*Abscess of the temporo-sphenoidal lobe treated by trephining.*" The patient, a young man aged 19, had scarlet fever in 1875, since which time the right ear had discharged a thin, yellow fluid, small in quantity and offensive. The last two days of August (1886) he began to feel unwell, and had severe pain in and around affected ear. Sept. 11th he took to his bed, with a temperature of 105°F. Next day the temperature was 103°, and the following evening 99.4°. No history of constipation or diarrhœa. On admission into hospital (Sept. 15th), a careful examination revealed no impairment of any function of the cerebral nervous system. There was, however, slight double optic neuritis. A blister was applied behind the right ear and calomel was given. The temperature ranged from 96.2° to 101.8°. On the 20th, Mr. Barker found a large perforation of right membrana tympani, and through this cleansed the middle ear; there was no swelling in the mastoid or temporal regions, and only a little tenderness. The optic neuritis increased on Sept. 25th. The patient became dull and had a severe attack of vomiting without previous nausea; no headache or squint. On the 28th Mr. Barker opened the mastoid antrum with a gouge in the usual way, half an inch above and behind the auditory meatus. There was no gush of pus, but some came away on the instrument, but on injecting it, pus welled out of the meatus. After thoroughly cleansing the middle ear a drainage-tube was left in the opening and the parts dusted with iodoform and dressed with salicylated wool. The patient improved up to the 2nd of October, when he became drowsy and again vomited. Next day he was

delirious. On the 5th the patient had a severe rigor preceded by a temperature of 105° . Dr. Gowers, considering that the rigor and the intense optic neuritis, taken in conjunction with the almost negative result of the previous exploration, constituted evidence of the existence of a cerebral abscess, asked Mr. Barker to trephine and search for one in the temporo-sphenoidal lobe. This was done the same evening. A V-shaped flap with the base upwards exposed a point one and a quarter inches behind and one and a quarter inches above the centre of the meatus of the ear. At this point the pin of the trephine was inserted and the bone removed. This corresponded to the inferior posterior angle of the parietal bone, close to the squamosal suture. The dura mater was found quite healthy and divided with a knife and turned back, when the surface of the brain was seen unaffected, and there was no fluid in the arachnoid space; a large aspirator needle was now thrust into the temporo-sphenoidal lobe in a direction inwards, forwards and downwards, and when the point had penetrated half an inch foetid pus began to pour out (about $4\frac{1}{2}$ drachms). When no more pus flowed, a Sims' forceps was slipped in and the opening dilated, and two or three drachms more pus was evacuated. To provide for thorough drainage of the cavity, the cortex was scraped away with a small Volkmann's spoon to the extent of the opening in the dura mater. The wound was washed out and dusted with iodoform, and the V-shaped flap cut away at the base to leave the trephine hole uncovered, a rubber tube placed in the abscess cavity, and the whole dressed with carbolized gauze. Next day the rubber tube was replaced by a silver one, which kept better in place. The case progressed most favorably, and on November 12th, thirty-eight days after operation, patient left for the Convalescent Home with the trephine wound quite healed.

In his remarks on the case, Mr. Barker said that in connection with these ear cases where abscess resulted, it was more frequently found in the temporo-sphenoidal lobe than in the cerebellum or elsewhere, because the roof of the tympanum is usually the thinnest part of its walls, but not feeling sure in this case he exposed the mastoid foramen, which was perfectly

healthy ; if the abscess had been in the cerebellum pus would have escaped by the mastoid foramen, because if there be inflammation in the posterior aspect of petrous bone it can hardly reach the cerebellum without forming a layer of pus under the dura mater of the lateral sinus.

Dr. W. S. Greenfield (*Brit. Med. Journal*, Feb. 12, 1887) also reports a case of *Cerebral Abscess with Otitis* successfully treated by trephining. The patient was a man aged 26, who was brought to the Edinburgh Royal Infirmary December 31st in a semi-comatose condition. After a severe cold in the head he began to suffer from severe headache, and became heavy and dull. He soon began to vomit his food, and his bowels were constipated. The week before admission the vomiting and headache became much worse. There was no delirium. Had scarlet fever when a child. There was no paralysis of face, nor was there any strabismus. The left eye showed on examination the papilla much swollen, clouded and gray. There was no discharge from the ears. On January 5th there was distinct ptosis of left eyelid, and left pupil dilated ; the torpor continued. The tongue deviated to the right, and there was intense optic neuritis in left eye, but none in right. On the 6th, the ptosis was complete, with dilation of pupil and some paralysis of fourth and sixth nerves as well. The left ear now for the first time began to discharge a dirty-brownish fluid, and on examination a perforation of membrana tympani was found. Temperature subnormal. Dr. Greenfield thought that the symptoms pointed in the direction of abscess in the anterior part of the left temporo-sphenoidal lobe. Operation was now decided on, and on Jan. 8th Mr. Francis Caird made a vertical incision some two inches in length in the temporal region, and the pin of the trephine was applied one inch and a quarter behind the left external angular process, and nearly one inch above the zygoma. The disc of bone removed consisted entirely of the temporal on its outer and lower aspect, and on its inner aspect of temporal, parietal and a small spur of sphenoidal. The exposed dura mater bulged forwards and felt tense, but did not pulsate ; on cutting through the dura mater a Graefe's knife was passed for

at least half an inch directly inwards, when foetid pus welled up (two ounces.) A drainage-tube was introduced and antiseptic dressing applied. Patient had a restless night, and still tended to lie on his right side and bury his face in his pillow. Next day he was very much better, ptosis was almost gone, was much more intelligent, and answered questions intelligently; he now lay on his left side. From this time improvement continued, and he was able to sit up by the 30th. Patient had no mental symptoms after operation. He remembered everything up to three or four days before the new year, after which all was a blank. Patient on Feb. 7th was in good health, though he still had a slight purulent discharge from the left ear.

In his remarks on the case, Dr. Greenfield says that the commonest position for abscess secondary to otitis is in the middle lobe of the cerebrum, and that it frequently lies in close proximity to the roof of the tympanum. But there are frequent departures from this rule, and, moreover, the size and direction of the abscess are very variable. In his case the most definite signs of involvement of nerves suggested the probable extension of inflammation to the inner aspect of the front of the temporo-sphenoidal lobe. As regards the operation, he thinks from the size of the abscess and its communication with the tympanum there is little doubt it might have been reached much further back.

Dr. MacEwen of Glasgow reports (*Lancet*, March 26, 1887) a successful case of trephining for *Cerebral Abscess due to Otitis Media*. The patient, a boy aged 9 years, was admitted into the Hospital for Diseases of the Ear, under the care of Dr. Barr, January 13th, 1887, suffering from septic purulent otitis media and abscess of the brain. A month before admission he complained of severe pain in the region of right ear, which kept him from sleeping. Next day he vomited, after which he became drowsy. The severe pain, drowsiness, feverishness, with occasional vomiting, characterized the first seven days of his illness. On the eighth day he had a rigor lasting a quarter of an hour, and during the next two weeks he had as many as six rigors. He was admitted into hospital on the nineteenth day of his ill-

ness. He was then greatly emaciated, had a cough, temperature 100.8° , pulse 108, very drowsy, and complained of pain in right ear, from which there was a very offensive discharge, and there was a perforation of the upper part of the tympanic membranes. The symptoms still continuing two days after entrance, Dr. Barr perforated the mastoid process, opened the mastoid cells, and washed out the middle ear thoroughly. A drainage-tube was then inserted. Two days later the boy had a rigor, and on the twenty-ninth day of his illness there was a copious discharge of foetid pus from the ear. Dr. MacEwen was asked to see the patient on the thirtieth day of his illness; he was then quite stupid, lying on his right side; had drooping of right eyelid, pain on percussion over right temporal region, but no oedema of mastoid process; pulse slow (50-60) and feeble; had cough and purulent expectoration; bowels constipated. There was a constant flow of excessively foetid fluid from the external ear, greater in amount than would likely come from the antrum; so it was thought that there was a connection with the intra-cranial cavity. Cerebral abscess was diagnosed, situated in temporo-sphenoidal lobe. After washing the scalp well, a half-inch disc of bone was removed from the squamous portion of the temporal bone, one and a half inches above and half an inch behind the centre of the external auditory meatus. The dura mater was slightly congested; when it was opened the brain tissue immediately bulged. A hollow needle was inserted for some three-quarters of an inch, when foul gas escaped, and on pushing the needle a little further offensive pus flowed out. The opening was enlarged, when more pus escaped. The cavity was washed with a saturated solution of boracic acid. As there was still some oozing of pus, an aperture was drilled into the base of the skull just above the osseous boundary of the external auditory meatus, involving the squamo-petrosal suture. The dura mater was found intact; it was penetrated and the abscess cavity reached. A stream of boracic solution was passed from this aperture so as to wash out the cavity of the abscess, and was continued till it freely passed out of the upper opening; bone drains were employed and parts dusted with boracic acid,

and sublimated wood-wool pads placed over all. The patient was extremely exhausted, but rallied in a few hours. After the first week he improved rapidly. The wounds were dressed once a week, when the parts were thoroughly syringed. Tubes removed in five weeks, and at end of six weeks child was quite plump. On March 17th still a slight purulent discharge from the ear, but hearing was good.

At the meeting of the Medical Society of London, held Feb. 21st, 1887, Mr. J. Black reported a case of trephining for supposed abscess of the temporo-sphenoidal lobes. The patient was a man aged 22, whose illness began with vomiting and shivering, and continued with rigors and high fever. He had suffered from otorrhoea for many years. There was a perforation of the membrana tympani, and there had been a sinus leading to mastoid cells. The cells were perforated and a free drainage established without much relief. A few days later trephining was performed, the dura mater was laid open, and brain pierced, without result. There was no optic neuritis. The patient, under stimulants and quinine in large doses, ultimately recovered. Mr. Brown inquired whether operation under the circumstances was justifiable.

In this connection there was an interesting discussion at the Medico-Chirurgical Society of Edinburgh in March last (*Lancet*, March 12th, and *British Medical Journal*, March 19th) on the *Diagnosis and Treatment of Cerebral Abscess*. Dr. McBride and Mr. A. G. Miller had a joint paper on cases of abscess following mastoid disease. In the paper Dr. McBride stated that if the vibrations be perceived by the injured ear in contact of the tuning fork with the cranial bones it indicates that the internal ear is intact, that the middle ear is the part affected, and that the abscess is situated above the tentorium. Should the vibrations not be perceptible, the internal ear is affected, in which case the matter is usually below the tentorium on the cerebellum. The operation proposed by Dr. McBride, and carried out by Mr. Miller, is to cut down as near as possible to the source from which the pus has sprung—*i.e.*, by the nearest route to expose the roof of the tympanum. This is done by reflecting the pinna forwards, opening the skull by means of a chisel at a point a

quarter of an inch above the ossous meatus. This opens the cranium exactly at the floor of the middle fossa. The dura mater is then raised from the petrous portion for the third of an inch towards the middle line, and the roof of the tympanum thus exposed, any abscess in connection with it being opened, or if contiguous, but not continuous, the abscess may be evacuated by incising the dura mater and a portion of the brain substance. Two cases operated on in this manner were reported. In each case the cerebral abscess was relieved by the operation, but both patients succumbed to septicæmia. In making a diagnosis between purulent meningitis and brain abscess the temperature was most important. Mr. Miller also drew attention to the relation which frequently existed between sudden cessation of the otorrhœic discharge and the supervention of formidable head symptoms. This appeared an important indication for treatment.

[Readers interested in this subject of mastoid disease and cerebral abscess might consult with profit the two following papers: "Abscess of the Brain resulting from Disease of the Ear," by Dr. Thos. Barr—*Brit. Med. Journal*, April 2, 1887. "On the Surgical treatment of Brain Suppuration following Ear Disease," by Dr. Robt. F. Weir—*New York Med. Record*, April 9th, 1887.]

Trephining for Epilepsy.—Dr. Hughes Bennett and Mr. Pearce Gould (*Brit. Med. Journal*, Jan. 1st, 1887) report a case of epilepsy of six years' duration completely cured by surgical operation. The case is as follows: W. A., aged 36, married; six years before, received a violent blow on right side of head. He was stunned at the time, was taken to hospital, and treated for a scalp wound. He regained consciousness after a few hours, and the wound healed perfectly in a few days. Six weeks later he was seized with a convulsive attack, in which he lost consciousness, and it was observed that the movements of the limbs were confined to the left side. He had a similar attack a fortnight later, and these have continued at irregular intervals ever since, averaging one a week. His general health continued good, but after most of his attacks he was seized with violent mania which rendered him dangerous, so much so that he was

confined in an insane asylum for three years. In May, 1886, he was admitted into hospital under Dr. Bennett. He was a tall, delicate-looking man, with all organs and functions of body normal and intelligence unimpaired. Over the right parietal bone was a transverse cicatrix in the scalp. This was movable, and no abnormality could be detected in the bone beneath, and there was no tenderness to touch. No trace of paralysis or loss of sensation. Special senses normal. The exact site of centre of scar was $3\frac{1}{2}$ inches from the longitudinal fissure in a line drawn vertically $2\frac{3}{4}$ inches behind the external meatus of the ear. During the two months patient was under observation in hospital he had weekly epileptic attacks, most marked on left side, preceded by irritability of temper. These attacks lasted five to ten minutes, after which he was very violent for half an hour and then fell asleep, and awoke in a few hours with headache. Next day he was in his usual condition. Immediately prior to attack he saw a bright red light in front of his eyes. Dr. Bennett advised trephining over the seat of the original injury in the hope of finding a depressed fracture or some other local or removable injury to the underlying cortex cerebri. On July 8th Mr. A. Pearce Gould made a large trephine opening at the seat of the cicatrix. The portion of bone removed was perfectly normal, and so was the dura mater underneath; a circular portion of this was excised, when the exposed cortex was seen to be apparently healthy. The brain was then explored in four different directions for about one inch in depth; nothing abnormal was detected. The wound was then closed and the man recovered, and five months after had had no attack. The operation was performed with the usual antiseptic precautions, the scalp being well washed and rendered aseptic previous to the operation. The wound was united with gut sutures and a drainage-tube used. Morphine (as recommended by Mr. Horsley) was injected before the anæsthetic was administered. The strange part of this case is that nothing apparently abnormal was found in the brain or its coverings, and yet the patient was relieved by the operation. His convalescence was uninterrupted and the wound healed soundly, there being not the least tendency to hernia cerebri.

Mr. Mayo Robson (*Lancet*), March 5th, 1887) reports a case of *Trephining over the Left Brachial Centre for Paralysis of the Right Arm*. The patient, aged 38, was admitted into the Leeds Infirmary, August 9th. Six days previously he was struck from behind over the head by a buck-horn handled stick. He was unconscious for ten hours after, and on recovering consciousness vomited. As soon as he regained his senses he noticed that he had lost the use of his right hand. He was dizzy and confused, and had loss of memory for some days. On admission to hospital there was a small lacerated wound on the left side of the skull, one and a half inches from the middle line, and a little in front of the mid-point between external occipital protuberance and root of nose. Bare bone could be felt on probing the wound, and at the posterior part was a depression in the bone. The whole of the right fore-arm and hand were markedly paralyzed. Sensation impaired and rhythmic twitching of the fingers. He was perfectly conscious and answered questions rapidly. Knee reflexes exaggerated on right side and some weakness of facial nerves. Well-marked œdema of left optic disc. Operation was decided on, and the depressed bone was trephined through a crucial incision. The inner table of the skull was found splintered, one piece especially depressing the membranes considerably. The fragments were carefully picked out and the dura mater exposed; it bulged slightly and was markedly pulsating; as it seemed perfectly healthy, it was not perforated. The operation, which was done under the strictest antiseptic precautions, only took twenty-five minutes. The case progressed most favorably, and was discharged cured on the 11th of September, both hands and arms being equally strong.

Dr. Robert Weir of New York reports a case (*Medical News*, March 5th, 1887) of an unsuccessful attempt at *Removal of a Sarcomatous Tumor from the Brain*. Mary R., aged 26, admitted to hospital September 16th, 1886, with following history: Has had four operations for sarcoma of the neck, the first two years ago and the last six months ago. Has latterly suffered intensely from headache on right side, clonic spasms of left leg, and cramped feeling of left hand. Left patellar reflex exagger-

ated. Slight left optic neuritis. The case was supposed to be one of tumor of the upper limit of the fissure of Rolando. Skull trephined in the line of the fissure of Rolando, one and a half inches from median line. Dura mater tense and bulging; opened by a crucial incision and brain explored, but nothing found. Wound healed well, but patient died two and a half months after the operation. At the autopsy a tumor was found springing from the left lobe of the under surface of the cerebellum, which proved to be a spindle-celled sarcoma.

In the *Philadelphia Medical News* for April 16th, 1887, Drs. Birdsall and Robert Weir report a remarkable case of *Removal of a large Sarcoma from the Brain*. The tumor was situated in the right occipital lobe of the brain, and was of large size. The patient was a Polish Jew, aged 42. He first observed that his gait was unsteady in August, 1885, and he had a severe attack of vomiting after a sea bath. Soon after diplopia for distance and increased awkwardness in walking were observed, and about the same time a disagreeable sensation akin to numbness in right leg, hand and shoulders. This and the diplopia were transitory. Headache, usually frontal, was present occasionally, but never severe. In October, 1885, patient consulted Dr. Seguin, who found that in addition to other symptoms he had left lateral hemianopia. The diagnosis of tumor of mesial aspect of right occipital lobe was made. Patient was treated with large doses of iodide of potassium without effect. In October, 1886, he was seen by Dr. Birdsall, who found left lateral hemianopia and double optic neuritis. Smell, taste and hearing normal. No word deafness. No paresis. The diagnosis of tumor of occipital lobe involving cuneus was made, and operation was advised. This was performed by Dr. Weir on March 9th, 1887. The skull was exposed by a U-shaped flap three inches long and three wide, with base upwards so as to cross irregularly the median line, the greater part being over the posterior cerebral lobe. A trephine one inch in diameter was used, and two buttons of bone taken away, one above the other, and the intervening bridge cut away with forceps. The dura mater rose tensely into the space, and when it was cut

through the tumor immediately presented itself. With considerable difficulty and some hemorrhage it was enucleated and removed, but not before it was divided. There was a great deal of hemorrhage into the large cavity left after removal of the growth, which was temporarily stopped by sponge pressure. The tumor weighed $5\frac{1}{4}$ ounces, measured $3\frac{3}{4}$ by $2\frac{3}{4}$ inches, and was $2\frac{1}{2}$ inches thick. Owing to the hemorrhage the cavity was stuffed with iodoform gauze, and in consequence the wound could not be properly closed. The patient was very weak after the operation, and was kept warm and had enemata of whiskey and milk every two hours. In the evening his pulse became weaker and the oozing still continued. Patient was conscious, though dull. Transfusion was decided on, so nearly two quarts of a saline solution was injected into the basilic vein of right arm, with immediate improvement of pulse and consciousness. The dressings were removed and the flaps of scalp separated, with the intention of removing the gauze, but patient rapidly collapsed and the bleeding still continuing, more gauze was packed in and the flaps replaced. Stupor rapidly set in, and notwithstanding a second transfusion, patient died at two a.m.

Mr. Horsley (*Brit. Med. Journal*, April 23rd, 1887) reports ten cases of operations on the brain and cranial cavity, and gives a detailed account of the methods employed. See, also, Mr. Horsley's paper in *Retrospect* for December, 1886.

Mr. Bennett May (*Lancet*, April 10th, 1887) reports a case of *Excision of Tumor of Cerebellum* in a boy aged seven. Child sank a few hours after operation.

Immediate Treatment of Compound Fracture of the Skull.—Dr. P. E. Muskett (*Australian Medical Gazette*, Oct. 15, '86) advocates early operative interference in compound fracture of the skull, and to support his views refers to a previous report of seven recoveries in thirteen cases under the care of the surgical staff of the Sydney Hospital during a period of fourteen months, and gives an analysis of twelve more successful cases of compound depressed fracture of the skull treated by operation. With regard to the indications and objects of such treatment, Dr. Muskett seems to hold views similar to those that

have been lately expressed by Dr. Wagner of Königshutter, who is of opinion that the trephine should be used, not so much for relieving or preventing compression, as for guarding the patient against septic inflammation. Dr. Muskett gives the following as the after-results to be feared in compound fracture of the skull if the depressed fragments are not elevated or removed and perfect drainage insured. (1) Septic meningitis setting in on the second or third day after the injury. (2) A spreading encephalitis running on to suppuration, with extensive destruction of cerebral tissue. (3) If the dangers of acute inflammation have passed off, death may result from softening around the injured part. (4) Subacute encephalitis, which may follow at a remote period. (5) The irritation of splinters from the inner table may eventually cause chronic meningitis, terminating in suppuration. (6) The same condition may induce chronic epilepsy. Dr. Muskett says that the removal of depressed fragments is essentially a procedure for preventing the development of inflammation in the membranes of the brain. In answer to the objection of trephining being a grave operation, Dr. Muskett holds that the application of a trephine, or what is more preferable, of Hey's saw, is not dangerous in comparison with the risk incurred in leaving osseous splinters imbedded in the dura mater.—(*London Medical Record*, January, 1887.)

The Cure of Cold Abscesses by Iodoform Injections.—This method of treatment has been of late years largely adopted on the continent of Europe. It consists in the evacuation of the abscess by means of an aspirator (the largest sized needle being used) and in the subsequent injection of a solution of iodoform in ether; a four or five per cent. solution is the one commonly used for abscesses of large or moderate size, but occasionally the strength is increased to ten per cent. when the abscess is of small dimensions. The quantity of solution to be injected varies according to the circumstances of the case, and it is generally recommended that not more than a drachm of iodoform should be used. The ether holding the iodoform in solution finds its way into every pocket and sinuosity of the abscess cavity and there deposits a film of iodoform. After the injection has been

made some little attention is necessary, for as the ether is rapidly volatilized by the heat of the body, and may cause an unpleasant distension of the abscess cavity, it may sometimes be necessary to introduce the needle of a hypodermic syringe in order to give exit to the gas. As a rule, patients suffer little from the operation, and are able to go about as usual after it. One injection is often sufficient to effect a definite cure of the abscess, provided it be not connected with joint or bone disease. Sometimes it is necessary to repeat the operation several times. The pain caused by the injection is usually pretty severe, and patients sometimes decline to undergo a second operation. Iodoform injections have also been employed with benefit in tubercular bone and joint disease.—(*Medical Record*, March 12th, 1887.)

Fixation of Displaced Semilunar Cartilages.—Prof. Annandale (*Brit. Med. Journal*, Feb. 12th, 1887) describes this operation and narrates four cases successfully treated by himself. The operation is performed by making an incision on the affected side along the upper edge of the tibia from the ligamentum patellæ for some three inches. After securing all the bleeding points the synovial membrane is also incised. The displaced cartilage is put in proper position with a blunt hook, and is secured to the periosteum and fascia over the head of the tibia by several catgut sutures. The external wound is then closed and antiseptic dressings and splint applied.

Intra-peritoneal Rupture of the Bladder.—Sir Wm. MacCor-mac reports (*Lancet*, Dec. 11th, 1886) two cases of intra-peritoneal rupture of the bladder successfully treated by abdominal section. In each case the rupture in the bladder was closed with silk sutures after Lembert's method, not including the mucous membrane, and so inverting it, after which the bladder was moderately distended to see if it was tight, and then the abdominal cavity was irrigated with a one per cent. solution of boric acid; the peritoneum was not sponged out. The abdominal wound in the first case was drained with a glass drainage-tube. In one case the rent was four inches long, extending from the superior fundus to the recto-vesical cul-de-sac. In the other case the tear involved two inches of the upper and posterior part of the bladder.

Dr. John Homans (*N.Y. Med. Record*, Jan. 15th, 1887) writes that when he has accidentally wounded the bladder in performing ovariectomy, he has sewed up the rent with a continuous silk suture, care being taken not to include the mucous membrane in the stitch. A catheter was placed in the bladder for ten days, and the patients recovered without any vesical symptoms.

Dr. R. F. Weir (*N.Y. Med. Record* for Jan. 22nd, 1887) reports a case of crushing injury in which he was not sure whether the bladder was ruptured or not, and where he satisfactorily proved the absence of intra-peritoneal rupture by slowly distending the bladder with a weak solution of carbolic acid after having placed a Petersen's pad in the rectum. The line of dullness was noted before and after the injection of the fluid. The solution which had been thrown in was evacuated and measured, and was found to correspond to the quantity previously injected. This, of course, demonstrated the integrity of the bladder. In making this experiment Weir says that not more than seven or eight ounces of fluid is necessary. By making use of this simple method in doubtful cases a useless exploratory incision of the abdomen may be avoided.

Osteogenic factors in the Development and Repair of Bone.
—Dr. William MacEwen of Glasgow has a most valuable and original paper on the above subject in the October and November numbers of the *Annals of Surgery*. The paper is based not on experiments made on animals, but on clinical observations made on actual cases in his own practice, both hospital and private. No one has done more for the advancement of the surgery of the bones than Dr. MacEwen, and he is regarded as an authority in this department of surgery, not only in Great Britain, but on the continents of Europe and America. He is a most accurate observer, as well as an original investigator, and is at the same time a man who has had a vast clinical experience, of which he has made good use, and observations made by him on the development and repair of bone demand the closest attention, because they are sure to throw new light on this very difficult and obscure subject. The article is too long to be re-

produced in *extenso*, but I shall endeavor to give a brief synopsis of it.

For a long time the periosteum has been regarded as the chief factor in the reproduction of bone ; more recently the medulla has been stated to be capable of bone regeneration, while a very insignificant part has been assigned to the elements contained in the osseous framework. Dr. MacEwen contends, however, that the periosteum is not the potent osteogenic factor which many believe it to be, but that the soft tissues enclosed in the osseous tissue play the chief *rôle* in the development and reproduction of bone. Dr. MacEwen, whilst freely admitting the importance of maintaining the intimate relations of the bone with this vascular periosteum, holds that too much fear is expressed that death of bone must follow the partial or temporary elevation of the periosteum. When only a part of the bone is denuded of its periosteum, it is still supplied with sufficient blood from the interior to preserve its vitality.

The article consists of a number of propositions, followed by cases which prove their correctness.

Proposition A. *When periosteum has been detached from an extensive area of an adult healthy bone and replaced after a lapse of some hours, union between the bone and periosteum can take place without sloughing or observable augmentation ensuing.*

Proposition B. *The periosteum may be separated from the bone for a period of days by inflammatory products, after the withdrawal of which, reunion between the periosteum and the bone may take place without necrosis ensuing ; showing that the temporary separation of the periosteum from the bone, even as a pathological result, is not necessarily attended by death of the bone.*

Proposition C. *The periosteum covering a portion of bone may be completely destroyed or permanently removed, yet the denuded bone may not only retain its vitality, but may throw out cells which will cover it and form a new periosteum.*

Most convincing cases are detailed to prove this latter proposition ; the following is most remarkable :—

A boy, aged $3\frac{1}{2}$ years, had the periosteum stripped from the

whole tibial diaphysis of one limb, with the exception of a small portion posteriorly which surrounded the nutrient vessel. This was the result of acute suppurative periostitis, the symptoms of which had lasted for nearly seven days previous to admission. The whole length of the tibial diaphysis was exposed by linear incisions; the periosteum was found separated from the bone by pus to such an extent that the finger could be passed round the entire circumference of the shaft. After a thorough washing, the bone looked like white porcelain. Between the periosteum and the bone was placed a series of layers of sublimated gauze, so arranged as to separate the periosteum from the bone around its whole circumference. In forty-eight hours the gauze was removed and the parts washed and inspected. The bone had all along its shaft the aspect of life. The stuffing was reapplied as before, and removed again on the fifth day. Now the shaft of the bone presented a pinkish blush, and in many places granulations were appearing. The stuffing was reapplied and removed on the sixteenth day, and now the whole shaft was covered with granulations, with the exception of a small portion which looked "like a white island in a red sea." The periosteum was also covered by a layer of granulation tissue, which was quite soft and pliable, and there was no hardness indicative of bone formation detectable in this layer. The stuffing was reapplied. At the end of four weeks granulations hid the entire shaft from view. The granulation tissue covering the bone had a firm cartilaginous feeling, and though of some thickness, was firmly fixed to the shaft. The granulation tissue covering the under surface of periosteum was quite soft. The two layers of granulation tissue were now allowed to come together and soon coalesced, and the wounds rapidly cicatrized.

In this case the preservation of the nutrient vessels tended greatly to the good result, but it proves conclusively that sufficient blood may be supplied from this source to sustain it for weeks, independent of the periosteal supply. The most interesting point in the case is the fact that the periosteum showed no evidence of bone growth, although granulations were freely thrown out.

Proposition D. *A portion of bone which has its continuity severed on all sides, and at the same time has had all its periosteum removed, is capable of living and growing.* Numerous observations are given in support of this proposition.

The next proposition goes still further.

Proposition E. *Not only do detached portions of bone deprived of their periosteum live when reimplanted in their original position, but such portions are capable of living after transplantation. Parts of deeper layers of bone which have no periosteal connection have lived and grown.*

A case is given where two inches of humerus was restored by bone-grafts.* In this case, although the periosteum was preserved, it produced no new bone.

Proposition F. *The periosteum does not initiate the reproduction of bone.*

If a healthy bone be removed subperiosteally without previous irritation, very little fresh bone is reproduced. The periosteal tube collapses, and its position is afterwards marked by a layer of fibrous connective tissue, which ultimately becomes absorbed. Again, if a matured bone has been submitted to irritation for a sufficient time to enable new bone to form, and the old bone be then removed subperiosteally, good, sound bone is reproduced. This is because the formative osseous elements have been poured out on the surface of the bone from the Haversian canals during the irritation of the bone and become entangled in the meshes of the periosteum. Thus a layer of new bone is formed on the periphery of the old and on the under surface of the periosteum, which serves as a starting point for the formation of new bone by the proliferation of osseous elements.

Proposition G. *Bone may be regenerated independently of the medulla, which may itself be reproduced.*

Proposition H. *The histo-genetic phenomena support the foregoing observations, showing that periosteum does not generate bone.*

The author then goes on to show how bone is reproduced from the proliferation of osteoblasts, which are found in the in-

* See Retrospect, September 1881.

terior of the bone, in the immediate tissue, in the Haversian canals, and under certain circumstances in the central cavity. So that the bone may be developed independently of the medulla and periosteum. The periosteum merely acts as a sheath, as a protecting limiting membrane through which the bone receives some of its blood supply, a very important portion being provided by the nutrient vessels. If these conclusions are accepted, Dr. MacEwen says that the surgeons will no longer trust the periosteum to regenerate bone unless it has adherent to it sound osseous plaques, the elements of which have the power of proliferation, as from these elements alone can osseous regeneration proceed. He will not discard injured osseous tissue under the belief that it must necessarily die, merely because divested of periosteum; but he will regard it as a tissue possessed of great independent vitality, which, if placed in suitable media where blood serum is plentiful and where blood vessels can be quickly thrown out, is capable of living and growing. With that belief, limbs which otherwise would be sacrificed may be saved.

Surgery of the Kidney—Method of Examining the Kidney.
—Dr. J. Israël of Berlin (*Deutsche Med. Woch.*, No. 20, '87), at a meeting of a medical society, showed a specimen of renal carcinoma which he had got by excising a diseased kidney. The chief interest of the case arose from the fact that at a very early stage of the disease he had diagnosed the affection by palpation, and then proceeded to extirpate the kidney. His method of examining the patient is as follows: After the patient has been well purged he should be placed on the healthy side on a hard surface, with a thick roll of some hard material under his flank to separate the ribs from the ilium. The end of the table towards which the patient's head points should be raised by placing blocks of wood under the legs. The patient should now be rolled half over on his belly and palpation performed between the anterior axillary line and the anterior edge of the greater dorsal extensors, immediately under the line of connection of the tips of the 11th and 12th ribs; at this point the lower end of the kidney, whether enlarged or normal, presses on inspiration. Israël mentions that the position of the kidney is altered by respiration, and that the kidney can be more easily felt on deep inspiration.

Dr. H. Longstreet Taylor, in a very comprehensive article on *Primary Malignant Degeneration of the Kidney in Infancy* (*American Jour. of the Medical Sciences*, Oct. 1887) describes two cases which came under his own observation, in one of which he removed the tumor through the anterior abdominal wall. The child was only 20 months old, and only survived the operation two hours. He mentions 25 cases in which the tumor was removed by operation, of which ten recovered. In many the operation did not succeed, because it was performed too late, and when the tumor had reached too large a size. Of the ten that recovered, six subsequently died from recurrence. Dr. Taylor is strongly in favor of operation, and says that no one can positively diagnose these tumors as carcinoma, and that at least an exploratory incision should be made. He alludes to the cases of Park and Godlee, where large tumors of the kidney were successfully removed in very young children. Park's case was doing well a year after operation.

Mr. Jordan Lloyd (*Practitioner*, Sept. 1887) has a suggestive article entitled *Practical Observations on Kidney Stone and on Kidney Mobility*. He rightly remarks that although kidney surgery was one of the latest medico-legal fashions till cerebral surgery usurped its place, there is still much to be learnt, as there is much to be forgotten. The fact that more than twenty-five kidneys have been explored for renal calculus without any stone being found is sufficient proof that the subject of diagnosis is not yet fully worked out. In many of these cases he has no doubt stone was present, but the operator failed to find it, first, because of the inaccurate conception that exists of the precise nature of a renal pelvis, and, second, because of the faulty methods adopted for the examination of the kidney's interior. Mr. Lloyd says the pelvis of the kidney is totally different from what our text-books tell us; instead of its being a funnel-shaped membranous sac, it really consists of a cluster of branching tubes, so that the procedure of exploring the kidney's interior by means of a finger introduced into the pelvis through an opening in the substance is practicable only in dilated kidneys, and is absolutely impossible when we are examining a viscus in a normal condition. He asserts that he has not yet, however, found a healthy kidney

into the primary pelvic tubes of which he could introduce his index finger. Mr. Lloyd's method of exploring a kidney is first to puncture its lower end with a long-bladed tenotome in a direction upwards and inwards, making for the lowest of the calyces; the surgeon can tell by the altered resistance the moment a cavity is struck. Into the opening a child's bladder sound is passed, and the whole interior of the pelvis of the kidney is systematically explored. The sound should have a beak not more than one-third of an inch in length and a stem seven inches. It should be passed at once to the top of the kidney cavity, a distance of nearly four inches, and the exploration should be carried on from above downwards. The author has found this method succeed when needle puncture had failed to locate the stone. In removing a small stone, a scoop and the finger is preferred to forceps.

The diagnosis of stone is often most difficult; occasionally pain may be present in both loins, or it may be referred to distant points, as the back of thigh, hips, &c.

The author attaches great importance to the evidence that may be obtained by immediate percussion over the suspected organ. Percussion should be made just beneath the space between the tips of the last two ribs, and in a direction upwards, forwards, and slightly inwards. The patient should be made to stand upright before you. The blow should be sharp and decisive, and of force sufficient to affect a structure situated several inches below the surface; if a calculus be present at the moment of percussion the patient will complain of a sharp, stabbing pain. To fix a floating kidney, Mr. Lloyd strips off a portion of the kidney capsule over an area of one inch in diameter, and then secures the kidney to the lumbar tissues by carrying two stout catgut sutures through the skin fascia and muscles and then entering the proper capsule and kidney substance close to the edge of the exposed area, making the sutures emerge at a corresponding point on the outside. He uses drainage in these cases, and closes the wound with deep silver sutures.

In the October and November numbers of the *Practitioner* there is an interesting article by Mr. R. J. Godlee entitled

Reflections suggested by a series of cases of Renal Calculus.

Referring to the necessity of greater knowledge of the symptomatology of renal calculus, he says Dr. Knowsley Thornton asserts that all the symptoms of stone in one kidney may be caused by the presence of a stone on that of the opposite side. Mr. Godlee mentions a case which rather lends support to this contention. It was the case of a young man whose right kidney had been twice explored thoroughly for stone without result ; seven weeks after the last operation he passed *per vias naturales* a stone the size of a date-stone. The question is, did this stone come from the other kidney or from the ureter. Since then he has been troubled with left renal pains. The author also refers to the frequency with which a person having a stone in the kidney refers the symptoms to the bladder, and mentions a case from which he removed a stone in 1885 from the right kidney of a man where for many years the symptoms had been referred to the bladder only, and he had been treated for cystitis by the best surgeons ; at last, however, he had a severe attack of right renal colic, which recurred, and Mr. Godlee performed nephrolithotomy with success. In this case, a few days after he was going about he had colicky pains of left side and passed several fragments of stone. The question arises, did these stones come from the right kidney. Mr. Godlee says that the post-mortem room of every hospital illustrates the fact that large calculi may cause little or no disturbance. Cases of shrivelled kidney are found where a stone has blocked the ureter ; but the kidney must have been affected with hydro-nephrosis before it shrank. Some much disorganized kidneys give rise to but little pain, pus in the urine being the only symptom. He relates the history of a case where the patient suffered from frequent attacks of typhlitis, which ceased altogether after a stone was extracted from the prostatic urethra. Repeated attacks of intestinal colic, especially if accompanied by nausea, should lead the surgeon carefully to investigate the state of the kidneys and urine. Rectal troubles occasionally occur before or during the descent of the stone, as pointed out by Mr. Bruce, and Mr. Godlee has seen well marked herpes zoster in the course of a lumbar nerve during attacks of

severe pain. The author asks the question, How long can a person go on with a kidney full of stones? and gives cases to show that subjects of renal calculus are often better left alone. In several cases where he has advised nephrectomy, and the patient refused, they got quite well, sometimes having a fistulous opening remaining. Several cases of abscess of the kidney which were operated on are instanced to show how the mere evacuation of the pus will effectually relieve the patient.

One should not be in too great a hurry in urging a patient to submit to a removal of the kidney, as the organ may still be able to do a certain amount of work. In a great number of cases nephrectomy may be undertaken with comparative freedom from anxiety, the principal dangers being from shock and loss of blood. The amount of shock depends on the amount of adhesions to surrounding parts. If the operation takes more than one hour, the prognosis of the case is not favorable. In cases where the kidney is much enlarged and full of abscesses, Mr. Godlee advises that a preliminary nephrotomy should be performed, and that nephrectomy should be performed later when the kidney has shrivelled. Mr. Godlee has extirpated the kidney four times, with one death. Several interesting cases of renal calculus are given in detail.

Splenotomy for Leucocythemia.—Dr. Strong (*Western Med. Reporter*, Sept. 15, 1887) reports the removal of a leucocythemic spleen weighing 9 lbs. 9 ounces. The spleen was freely movable, no adhesions to the abdominal wall or intestines existing; the tail of the pancreas was so firmly united to the hilus of the spleen that no attempt was made to separate it; it was ligated with the pedicle of the splenic tumor. The great curve of the stomach was adherent to the spleen. The patient died four hours after operation from hemorrhage of the adherent surfaces which had been separated.—(*Med. News*, Oct. 8th, 1887.)

Splenectomy for Wandering Spleen.—Dr. Myers removed a large spleen weighing 7 lbs. from a woman who had malaria. The spleen had become dislocated and settled on the brim of the pelvis. Three suppurating sinuses led down to it. Tumor was removed by abdominal section and the pedicle ligatured in

two places. The wound was drained. Patient was discharged from hospital on the 21st day, and ultimately fully recovered.—(*Jour. of Amer. Med. Ass.*, April 2, 1887; quoted in August *Annals of Surgery*.)

In a paper read by Dr. Podrez of Russia before the Russian physicians assembled in Moscow, January 1887, a brief account was given of all the known splenectomies, numbering 41. He adds a case of his own. A woman aged 36, large spleen from malaria; extirpated by incision along edge of left rectus abdominis muscle. Considerable blood lost at operation from rupture of a vein. Patient did well for three weeks and then died of septic symptoms. Of the 42 cases reported, only 10 were favorable.—(*Chirurg. Vestnik*, March, 1887.)

In the same journal a case is reported by Dr. Donat of extirpation of the spleen in a female, aged 26, suffering from malaria. Patient recovered. Next year patient was delivered of a healthy child.

Dr. Orlovsky also reports a case (*Gazeta Lacarsca*, No. 1, 1887) of removal of spleen from a woman aged 26. There was ascites. Great hemorrhage during operation. Patient died on the 25th day. Death preceded by inflammation of lungs.—(*Annals of Surgery*, Aug. 1887.)

Tumors of the Bladder.—Prof. Guyon of Paris, in a paper read before the French Congress of Surgery (*Revue de Chirurgie*, Nov. 1886), says that in the immense majority of cases, the diagnosis of tumors of the urinary bladder can be established without operation. The cardinal symptom of bladder tumor is hæmaturia; when this occurs without appreciable cause, tumor should be suspected, still more so if it be produced in spite of repose. When simple catheterization determines an abundant and lasting hæmaturia, a tumor may be almost positively diagnosed; the hæmaturia may be determined by the sound in contraction of the bladder. In every case the passage of blood is of importance, for it demonstrates that the bladder is the seat of the affection. It is easy to recognize this from renal hæmaturia, which is often preceded by nephritic colic. . . . Fragments of the tumor may be passed in the urine, and by microscopic

examination the nature of the growth may be determined. Having diagnosed the tumor, how shall it be treated? There is but one method of exploration which permits of ocular inspection, viz., supra-pubic section, the only local contra-indication being too great infiltration of the walls; this can be determined by rectal examination. Vesical tumors, malignant, as well as benign, may occupy the bladder without the subject suffering otherwise than from hæmaturia. We have cystitis, retention of urine, etc., in cases of benign as well as malignant tumors. It is not the nature of the tumor, but the trouble caused by the affection, that is of importance. Benign tumors are always removable, malignant never; even when they have hardly attained the size of a pea there is a marked infiltration of the bladder wall, and when their existence is suspected on account of hæmaturia, it is already too late. Operative measures are determined, not by the volume of the tumor, but the appearance of complications, cystitis, retention, etc. The operation must be radical, and for that the interior of the bladder must be open to easy examination. The frequency of accessory tumors alone would be sufficient to eliminate perineal section. The proper operation is hypogastric section. If the tumor lies in the superior segment of the bladder, resection is possible, and should be done, but more often the tumor lies in the neighborhood of the trigone, near the ureters, where resection is impossible. In such cases the surgeon must be content with scraping and cauterization.

Prof. Guyon, at the time of writing this paper, had performed 18 operations upon 15 patients, three being recurrences. In 13 cases the tumors were malignant, and in two only was there a permanent cure. However, in all the cases the conditions which demanded operation were alleviated.—(Condensed from *Annals of Surgery*, May 1887.)

Suction in the Removal of Foreign Bodies from the Bladder.—Mr. Reginald Harrison of Liverpool (*Lancet*, Oct. 29, 1887) has discarded the lithotrite as an extractor of foreign bodies from the bladder, and trusts to a large-eyed evacuating catheter, such as is used for lithotripsy, and a rubber wash-bottle connected with it, by means of which the bladder can be emptied and filled with

a stream of water of considerable force. Foreign bodies introduced into the bladder are, as a rule, of an elongated shape, and it will be found that the end of the body is sucked into the catheter and in this way may be withdrawn. He mentions cases in which he has in this way removed from the bladder foreign bodies, such as pieces of gum elastic catheters, and in one case a pig's bristle which had become coated with phosphates.

Etiology of Tetanus.—Dr. Larger, in a paper read at the Surgical Society of Paris, brought some new facts to support his theory of the contagiousness of tetanus. In January, 1882, a man died from tetanus following a wound of the hand. A few days afterwards, a man suffering from a wound, also of the hand, was placed in the same bed. He developed tetanus and died. At the same time a child of seven lying in the next bed, who had had one of his thighs amputated, also succumbed to tetanus. In Sept. 1886, four and a half years afterwards, a man with a wound in the finger was placed in the bed occupied by the first tetanic patient in 1882. He contracted tetanus, but did not die. The question of catching cold can only be raised in the second case. There was no tetanus in the town in 1882 or 1886, and the ward during that interval underwent no rigorous disinfection. In none of the cases could the origin of tetanus be traced to any horse. The long interval separating the last from the preceding cases suggests coincidence rather than contagion. M. Larger notes that contagion with a long interval crops up three times among the facts he has gathered. Ten years had elapsed between two cases of tetanus occurring amongst the horses of one stable at Achères; two years between the time the last horse was affected with it and the time a woman contracted it after being injured in the same stable; lastly, eleven years between the cases of two workmen at Barentin who occupied the same room. M. Cagnat of St. Denis met with six cases in six months which occurred in six horses who had been operated on with the same *écraseur*, none occurring in amongst the animals operated on with other instruments. This *écraseur* became harmless after being dipped in boiling oil.—(*Revue de Chirurgie*, Jan. 1887; quoted in *Annals of Surgery*, July 1887.)

Pneumotomy.—Dr. G. Foubert (*Archives Général de Médecine*, Oct. 1887) has collected the cases of pneumotomy so far reported. The total number of cases is 80, with 47 cures and 33 deaths. The cures occurred principally in the hydatid cases. There is fair success with gangrenous cavities, bronchiectasis, and abscess. The summary is as follows: (1) Tuberculous cavities in which there was incision made either with or without resection of rib, 7; one recovered completely and one lived for some time. (2) Abscess of lung, 14 cases; 9 cures, 5 deaths. (3) Hydatids of lung and pleura, 34 cases, with 29 cures. (4) Gangrene of lungs, 18 cases; 9 recovered, 2 improved, and 7 died. (5) Bronchiectasis, 12 cases; 4 cured.—(*N. Y. Med. Record*, Oct. 29, 1887.)

Intestinal Surgery.—A remarkable paper on intestinal surgery was read at the General Surgical Section of the International Congress at Washington on Sept. 5th, 1887, by Dr. Senn of Milwaukee. A synopsis of this is given in the *Lancet* of Oct. 7th; the whole paper will, of course, appear in the *Transactions*. The interesting point in the paper is the healing of perforating gunshot wounds of the intestines by omental grafting, with or without scarification of the serous surfaces. The omental grafting effectually prevents all escape from the intestine into the peritoneal cavity. This he calls (1) the adhesion experiment; (2) Ileo-colostomy in intussusception or intestinal obstruction, by opening the bowel above and below and bringing the artificial openings in apposition with decalcified bone plates; (3) Enterorrhaphy, or the rubber ring method without the omental flap, when excision of the bowel is necessary for gangrene, as in hernia. This mode of dealing with the bowel consists in bringing the healthy ends of the intestinal tube together by means of a circular indiarubber ferrule or tube made easily out of a piece of thin Martin's rubber bandage, about an inch long, inserted into each end of the bowel and the serous surfaces sewn together round this tube on the outside. Dr. Senn says that in dogs it is a matter of little consequence whether three inches or three feet of intestines are removed; resection of more than six feet is uniformly fatal. His results have been obtained chiefly

from experiments on dogs, and the specimens were shewn to the Congress.

Gastrotomy for the Digital Exploration of the Œsophagus and the removal of a foreign body.—Till quite recently, when a foreign body was lodged in the Œsophagus and could not be reached from the mouth or pushed into the stomach, œsophagotomy was performed in order to remove the body, if it was not too far down. When it was near the cardiac orifice of the stomach, its removal was left to nature. Sometimes the case terminated by the foreign body ulcerating into some of the neighboring blood-vessels and so caused the death of the patient. In the museum at Vienna is a specimen showing a piece of bone lodged in the Œsophagus, and which had ulcerated into the aorta at the point where the gullet crosses it in the thorax. Foreign bodies have been vomited up after having been lodged many months in the Œsophagus. I saw a case where a boy had accidentally swallowed one of those button-shaped tin whistles with a hole in the centre. It had lodged transversely in the Œsophagus, and the boy had lived for nearly two months on liquid food, which trickled through the central hole. It was easily pushed down into the stomach, and a couple of days afterwards was passed per anum.

Should the body be lodged low down in such a way that it cannot be displaced from above, are we to leave the case to nature? This question is answered by two cases which have occurred within the year, where the foreign body was removed by gastrotomy; by this means the foreign body was reached from below. The first case recorded is that of Richardson of Boston, in the *Boston Medical and Surgical Journal*, Dec. 16th, 1886, when a plate containing four false teeth, which had been lodged in the Œsophagus, near the cardiac end, for eleven months, was removed by an incision through the abdominal wall and stomach large enough to admit the hand and half the fore-arm. At the end of four and a half months the man was in good health and had gained 54 pounds. The second case was reported quite recently to the New York Surgical Society by Dr. W. T. Bull (*Medical News*, Oct. 22nd, 1887). Having read the account

of Dr. Richardson's case and the experiments performed by him on the cadaver, which led him to recommend gastrotomy for bodies impacted at a distance of no less than 13 inches from the teeth after other means have failed, he resolved to employ gastrotomy in a case of impacted peach-stone in a boy 4 years of age, who fell under his care. Dr. Bull failed to dislodge the stone with instruments introduced through the mouth, and discarded œsophagotomy on account of the situation of the foreign body, which would be some six or seven inches from the œsophagotomy wound. Gastrotomy was decided on, and then, whilst considering the best method of performing it, was led to the following conclusions:

(1) That large incisions in the abdominal wall and stomach, together with manipulation of that organ outside the abdominal cavity, and the introduction of the hand into it, ought to be avoided if possible, as they would be very dangerous in so young a subject.

(2) That the exploration could be effected by the finger alone introduced through a small wound, if the anterior wall of the stomach were invaginated so as to fold itself about and behind the finger entering the œsophagus.

(3) That the nearness of the œsophageal opening in the diaphragm to the vertebral column would make that structure an easy guide to the orifice, and, moreover, an incision in the median line would be nearer to that orifice than one parallel to the border of the ribs. This incision was in general preferable, and the hand or finger manipulating through it would be less encumbered by the overhanging ribs.

(4) That the nature of the body (it being smooth and free from sharp corners) made it probable that it would be safe to push it up from below, or to draw it up, in case it was not easily dislodged downwards into the stomach.

The operation was performed August 29th, a week after the peach stone had become impacted, after first ascertaining that the peach stone was still in position, 13 inches from the teeth. The abdomen was opened in the middle line by an incision three inches long, on a level with the fourth costal cartilage. The

stomach was opened midway between the pylorus and cardiac end for $1\frac{1}{4}$ inches ; after passing in two loops of silk, the abdominal wound was also held apart by silk loops, and the finger introduced. The finger stopped up the wound so that nothing escaped, and as it pushed its way in it invaginated the abdominal wall. The foreign body could not be felt till a bougie was pressed gently on it from above. The stone could not be extracted by forceps, so a slender bougie was passed over it and projected from the mouth ; then a sponge $1\frac{1}{2}$ inches in diameter was tied to the inner extremity with silk, one end of which was left long. The sponge was pulled through, meeting with slight resistance, but the foreign body, although dislodged, was not brought up. A larger sponge was then tied to the long end of silk and drawn through. This brought the stone into the mouth, where it was easily extracted. The stomach wound was closed by suturing first the gastric mucous membrane and then the peritoneal coat with Lembert's sutures. Dressing of gauze and absorbent cotton. The boy made a rapid recovery. Fed by rectum for four days.

The points of interest in this case, says Dr. Bull, are : (1) The small wound in the stomach ; (2) the invagination of the anterior wall of the stomach ; (3) the use of loops of thread entrusted to assistants, by traction on which the edges of the wound in the stomach were kept close against the finger, so that it acted as a plug and prevented the escape of fluid ; (4) the moderate manipulation of stomach itself.

Removal of Needle from Heart.—In the report of the last meeting of the German Surgical Congress in the *Centralblatt für Chirurgie* is a paper by Dr. Stetzner on the above subject. A student, after a spree, sought to commit suicide by driving a needle into his heart. Twelve hours after the introduction of the needle the first serious symptoms made their appearance. There was pain in the cardiac region, difficulty of breathing, a loud pericardial murmur at the apex. After 36 hours the symptoms became so serious that an operation for the removal of the foreign body was determined upon. No trace of the needle being found either under the skin or in the intercostal space, a piece of the fifth rib was resected, thus opening up the left

pleural cavity ; then the pericardium was opened and about a teaspoonful of cloudy pericardial fluid ran out. Now the needle could be felt lying diagonally in the right ventricle. Its head was driven out through the anterior wall of the heart and then fixed in this position with the finger-nail. The irregular and violent beating of the heart made it very difficult to catch the foreign body with the forceps, and on attempting it, it again slipped into the ventricle, but this time assuming a vertical instead of a diagonal position, rendering it impossible to make any further attempt at its removal. In addition to this, an iodoform tampon which was used to block up the hole in the pleural cavity was drawn in by a very deep inspiration and could not be found again. The wound was plugged, and although the patient suffered from severe pneumothorax, with copious exudation, he recovered in four weeks. At present he enjoys good health. There is neither heart murmur nor abnormal pulse, nor any trace of pleural exudation. It is a matter of speculation where the needle now is. Dr. Ivan Hardt has collected 22 cases of needle in the heart, of which 19 were found accidentally whilst making post-mortems. In three cases the needles had been driven into the heart accidentally, and such a short distance that they were easily extracted. In the discussion which followed, Dr. Hahn of Berlin showed a knitting-needle which von Bergmann had removed from the heart of a girl aged 11. It had been driven into her heart by a blow from a slipper. The patient suffered immediately from asphyxia. Under the third left rib a black point could be seen, which was felt to be the end of the needle. There was a systolic murmur at apex. The needle was easily extracted, and a previously very rapid pulse immediately fell to 90 per minute and the heart murmur disappeared.—(*Western Lancet*, Sept. 1887.)

SURGERY OF GALL-STONES.

Cholecystotomy.—The need for the performance of cholecystotomy may arise from the impaction of a gall-stone in the cystic duct, or from closure of this duct in some other way when a distended gall-bladder has to be dealt with, with contents not necessarily bile, but a serous, sero-purulent, or purulent fluid. When the gall-bladder is much distended there is a danger of its rupturing into the peritoneum. In such cases operative relief is demanded. Usually the operative procedure is easy; the distended gall-bladder allows plenty of room for the extraction of stones, or its stretched walls can be readily sutured into the abdominal wound. In the hands of experienced operators the risk is small. Two cases reported by Mr. Knowsley Thornton (*Brit. Med. Journal*, Nov. 26th, 1887), where the gall-stones had passed into the common duct, and where the gall-bladder was small and shrunken, presented unusual difficulties. The first case was that of a lady aged 45, who had had several attacks of severe pain in the region of the liver and vomiting. When Mr. Thornton saw her with Dr. Geo. Johnson she was deeply jaundiced, anæmic and emaciated, and suffered from constant pain deep down in the region of the gall-bladder and in the back. No special projection of the gall-bladder, but on deep palpation, which caused severe pain, a hard angular body was distinctly felt. Diagnosis, stone impacted in the common duct. Operation was advised. An incision three inches long was made over the gall-bladder; the gall-bladder was so atrophied and surrounded by adherent omentum and small intestine that it was thought to be non-existent. A stone was felt in the common duct, and after scratching through the omentum the gall-bladder was found. It was carefully packed round with carbolized sponges and about a drachm of muco-purulent fluid drawn off by aspiration. The puncture was enlarged and the finger introduced; the gall-bladder was so shrunken that it would only admit the index finger. The opening of the cystic duct could be felt, and through this a probe was passed which easily detected the stone in the common

dect ; the cystic duct was now carefully dilated till the finger could be passed through it and the exact size and situation of the stone felt. After a great deal of trouble the stone was broken up by probes, forceps, etc., and then extracted with long forceps. This part of the operation took an hour and a half, and the gall-bladder was so much torn and bruised by the forceps with which it was necessary to hold up the two sides of the opening into it, that it was found impossible to stitch it to the abdominal wound. So after sponging it out carefully with a solution of sublimate (1 to 1000), Mr. Thornton determined to carefully close the wound in the gall-bladder and leave it free in the peritoneum. This was performed with great difficulty, the torn edges of the adherent omentum being utilized to get a hold for the stitches and thoroughly close the wound. On sponging out the peritoneum it was found that some bloody serum had oozed down into the pelvis, so an opening in the abdominal parietes was made immediately above the pubes and a glass tube introduced. Another glass tube was put in the wound over the gall-bladder ; the mouth of each tube was surrounded by dry carbolized gauze, and each had its rubber sheet filled with carbolized sponges, which were changed every twelve hours under the spray. A considerable amount of fluid, more or less bile-stained, was evacuated by a glass syringe with a piece of rubber tubing on the nozzle. The case eventually did well, and patient returned home cured in six weeks. Convalescence was somewhat retarded by an attack of asthma, which displaced the tubes. When last heard of she had gained some twenty pounds in weight. The second case was also a difficult one, a woman aged 56 ; frequent attacks of pain and vomiting, jaundice, and emaciation. The operation revealed matting of the omentum and intestines over the gall-bladder, which made it very difficult to reach. A stone was found in the cystic duct, and when this was removed two large ones were found in the common duct. The gall-bladder was with difficulty stitched to the abdominal wound, and a small red rubber drain introduced deeply into the common duct. The tube was removed on sixth day. The patient suffered considerable pain in the region of the gall-bladder, and had some eleva-

tion of temperature, but no bile came away after the first month, and she was sent home in six weeks and is now in good health. Mr. Thornton remarks that when we have to deal with a distended gall-bladder and a stone impacted in the cystic duct the operation for its removal is easy. The bladder is carefully surrounded with carbolized sponges and aspirated. When empty it is incised and opened, then its stretched walls are easily held forward outside the abdominal incision, and the necessary manipulations carried on in a large cavity and without risk of any remains of the fluid contents fouling the peritoneum. But it is very different when the gall-bladder is shrunk and the edges of the incision cannot be brought out of the abdominal wound ; the risk of fouling the peritoneum is much greater. This difficulty is much increased if the individual be stout. Mr. Thornton has never removed a gall-bladder, but he thinks this operation less dangerous than either dragging a small bladder to the abdominal wound or suturing it and dropping it into the abdomen.

In the *British Medical Journal* of January 21st, 1888, Mr. John W. Taylor of Birmingham reports a case of *Cholecystotomy for Gall-stones*. The patient was a woman aged 42, who had for four or five years noticed a swelling on the right side of the abdomen. This grew suddenly larger about eight months previously. Had had eleven children, youngest 20 months old. No history of jaundice or acute colic. The tumor was situated in right hypochondriac and umbilical regions, freely movable, and careful palpation elicited a vibratory thrill. No true fluctuation. Case was diagnosed as one of distended gall bladder. The edge of the liver overlapped the tumor. Abdomen opened on outer side of right rectus, over the most prominent part of tumor ; beneath the peritoneum the liver was met with, but by pressing up the tumor a portion of distended bladder was seen. This was tapped and a pint of clear gelatinous fluid evacuated. The puncture was enlarged and the finger introduced into the gall bladder ; several loose stones were removed from the bladder and one was wedged into the cystic duct, which could not be removed with the forceps at hand, so it was left. The wound in gall bladder was sewed to the abdominal wound, a large opening

being left, and into this was placed a large-sized rubber tube. Through this tube the gall bladder was washed out morning and evening with warm water. On the fourth day the returned water was tinged with bile, showing the cystic duct was becoming free. Sixteen days after the operation a pair of Lister's forceps was introduced into the gall bladder ; the stone was found quite loose, it was broken and the fragments easily extracted. The debris was then syringed out. Patient left hospital eight days after with gall bladder and duct perfectly free.

In this case Mr. Taylor was induced to make use of the stream of water because he had seen its benefit so often in impacted wax in the ear. The use of delicate forceps in this case was of great value.

Dr. W. A. Mackay of Huelva, Spain, narrates an interesting case, in which he removed a stone from the cystic duct (*Lancet*, Dec. 24th, 1887) in a woman aged 40, who was married and had five children. The patient was deeply jaundiced, and was suffering from great abdominal distension ; a rounded swelling could be made out in the region of the gall bladder ; 400 ounces of fluid drawn off from abdomen revealed the tumor more distinctly. The ascites soon returned, so it was decided to operate. The usual incision was made, the ascitic fluid evacuated, and the gall bladder revealed size of a large pear and filled with sticky bile, opened and finger introduced, and a large stone removed from cystic duct, none in common ; fistulous opening remained, which discharged quantities of bile ; the discharge suddenly stopped, and she died of exhaustion some two weeks later. Post-mortem revealed cancer of the liver and pancreas, with occlusion of common duct. The sudden stoppage of bile was due to perforation of the common duct.

These cases are not easy to diagnose. It is often difficult to say whether a case of obstruction of the common duct is due to an impacted calculus or malignant disease. Of course when the cystic duct alone is distended, then there is no jaundice. Mr. Tait looks upon all these cases which are accompanied by jaundice as due to malignant disease, but the cases reported above by Mr. Thornton prove the contrary.

Treatment of Gall-stones Obstructing the Intestines.—Dr. Anderson and Mr. Thomas Smith (*Lancet*, Dec. 3rd, 1887) report a case of obstruction of intestines due to the presence of a large gall-stone. Patient, a man aged 65, had suffered for six days from complete obstruction of the bowels, with distension of abdomen, pain and vomiting. He had had several previous attacks of partial obstruction. Medical treatment proving of no avail, laparotomy was decided on. An incision six inches long was made, and search carefully made for point of obstruction. A large gall-stone was found in the small intestine. The intestine was incised, the stone removed, and the wound sewed with Lembert's suture. Patient made an excellent recovery.

In connection with this case, Mr. Lawson Tait, in a letter to the *Lancet*, Dec. 10th, 1887, says that there is a much easier way to deal with gall-stones obstructing the intestines than opening the bowel. It consists in passing a fine needle through the wall of the intestines from below into the gall-stone. The stone is thus easily and immediately split into fragments and passes readily along the intestine, and the grave complication of opening the intestine is unnecessary.

At the meeting of the Clinical Society of London, held Jan. 13th, 1888, Mr. Clutton, of St. Thomas's Hospital, read a paper on a case of *Laparotomy for Obstruction from Gall-stone*. The case was that of a woman aged 70, in which the abdomen was opened on account of obstruction which was thought from the history to be due to impacted gall-stone. On opening the abdomen the stone was found in the lower end of the ileum. Instead of incising the bowel and extracting the stone Mr. Clutton pushed it on through the ileo-cæcal opening and sewed up the abdominal wound. The patient was relieved of her symptoms and made a perfect recovery. The symptoms of obstruction began twenty-four hours before operation with sudden acute pain in the abdomen, with fainting, and on examination, a tumor which has previously existed in the region of the gall-bladder had disappeared. The calculus was passed naturally five days after the operation, and measured $3\frac{2}{3}$ inches in circumference.

At the same meeting Mr. Arthur Barker showed a large gall-

stone removed from the ileum after death. It measured four inches in circumference. It had caused complete obstruction, and though it could be pushed upwards from its situation, it could not be forced downwards towards the valve. He considered that there would be no danger in performing laparotomy with a view to crushing the stone by means of a long needle, or even of opening the intestine, removing the stone, and suturing the bowel.

Mr. Heath spoke of the value of systematic manipulation in cases of colic due to renal calculus, and this might also be carried out in cases of intestinal obstruction due to gall-stone. The abdominal walls should be thoroughly relaxed by an anæsthetic, and the bowels should be also deprived of their contractility so as to enable the massage to be thoroughly performed and the stone so manipulated as to be moved onwards towards and through the ileo-cæcal opening. The results of operative interference were not satisfactory.

Mr. Thornton spoke of the success of Mr. Clutton's case, and contrasted it with the tedious and anxious waiting of cases treated by physicians, and thought it would be a good general rule to call for surgical aid when serious symptoms persisted. He spoke with approval of Mr. Tait's method of crushing the stone *in situ* with a pair of padded forceps, and he thought that this method could be applied with but little risk, provided the stone were first dislodged into a healthy portion of the intestine. It would also be possible, by means of a long needle, to fracture a large stone and thus allow the fragments to easily pass the ileo-cæcal valve. The mere pricking of the intestines in a healthy patient is of no consequence.

Obstruction of the intestine due to gall-stone is more common than is supposed. Every pathologist has knowledge of such cases which he not unfrequently meets with in the post-mortem room. Strange to say, the stone may cause symptoms of complete obstruction and death, and yet be a small one, which does not fill the intestine. The method of treatment by laparotomy is a great advance on the old method of masterly inactivity, and the improvements in the operation introduced by Mr. Clutton and Mr. Tait greatly lessen the danger of the operation by doing away

with the necessity for opening the intestines in operations undertaken for such cases.

HYDATIDS OF THE LIVER.

At a meeting of the London Clinical Society, held Dec. 9th, 1887, Dr. Coupland read the notes of a case of *Hydatid Cyst of the Left Lobe of the Liver*, which was cured by operation. The operation was performed by Mr. Pearce Gould. A hydatid cyst the size of an orange was found in the left lobe of the liver. The cyst was punctured, and clear hydatid fluid, containing numerous scolices, evacuated. The cyst wall was then firmly stitched to the abdominal wound, freely incised, and a drainage tube inserted. The case did well, and a few days after operation the collapsed hydatid was extracted; later, the fibrous adventitious cyst. After this the cavity rapidly granulated.

At the same meeting, Mr. Edmund Owen also read a paper on a case of *Hydatid Tumor of the upper surface of the Liver*, successfully tapped and drained across the pleural spaces. The patient was a married woman, aged 34. On first seeing her in May, 1886, there was great fulness in the region of the liver and dulness on percussion reaching from the fourth rib to the umbilicus, right lung greatly elevated and compressed. Hepatic tumor smooth, hard, gave no wave of impulse, and did not move with respiration or with any change of position of patient. Aspirated and removed thirty ounces of clear fluid, which contained no hooklets. In July the tumor was increasing and was again tapped, and sixty-eight ounces of bile-stained fluid came away; this contained abundance of hooklets. In the beginning of 1887 the patient was again admitted into hospital. The tumor had increased so much that there was danger of its bursting into the thorax. Several aspirations were performed with a fairly satisfactory result. Operation was decided on, and it was thought, as the tumor was completely under cover of the ribs, it could be best reached from above, through the diaphragm. An incision was made through the eighth intercostal space, the pleural cavity was opened, and the diaphragm felt bulging along inner surface of chest wall, but the lung itself, completely collapsed, could not

be felt. The diaphragm was then incised, and the finger passing through it felt a tense cyst, from which a considerable quantity of fluid was evacuated by aspiration. When the cyst was relaxed it was drawn through the diaphragm to the skin wound and fixed there with four harelip pins. On the fourth day the cyst was incised and a large flanged tube inserted. The cyst was washed out daily with iodine water. The patient did well, and when last seen the lung had descended to its normal position.

Allusion was made to a case of large liver abscess evacuated through the healthy pleura a few months later by Mr. Rickman Godlee, and where the costal pleura had been stitched to the phrenic pleura.—(*Brit. Med. Jour.*, Oct. 22, 1887.)

Mr. Treves read a case of *Extra-peritoneal Rupture of a Hydatid Cyst of the Liver* in a married woman aged 21. The rupture was caused by her husband hugging her vigorously, lifting her off her feet while doing so. She immediately felt agonizing abdominal pain and became very faint. Twenty-four hours later a swelling appeared under the ribs of the right side. It was dull on percussion, but did not fluctuate, and appeared to be under the skin. The tumor increased in size and became painful, and the patient rapidly emaciated, so the tumor was incised close to the margin of the ribs. Hydatid fluid escaped, and suppuration supervened. The patient died greatly emaciated three months after the injury. Necropsy showed that a hydatid cyst had formed in the posterior part of the right lobe and had been ruptured.

Dr. Angel Money related a case of *Empyema due to Hydatids* that had been under his care. Mr. Macready was called in and excised a portion of the ninth rib. A large cavity was found, in which abundance of hydatids existed; there was a hole in the diaphragm leading into the hydatid cyst in the right lobe of the liver.

In the discussion which followed the reading of these papers, opinions differed much as to the ultimate value of aspirating these cysts, but Dr. Broadbent's explanation of this divergence of opinion was that the prognosis depended largely on the nature of the fluid. When it is clear, and does not contain, as is often

the case, numerous daughter cysts, then recurrence will not take place. When, however, the contents consist largely of minor cysts and *debris*, suppuration or recurrence is probable. In any case aspiration ought always to be performed, for a certain number of cases recover after this operation alone. If operative measures be decided on, it is safe to divide the operation into two stages—one of incision of the abdominal wall and attaching the cyst to it, and the other of opening the sac a few days later. The greatest difficulty in these cases is the early diagnosis; but by a careful use of the aspirator much may be revealed.

SUCCESSFUL EXCISION OF A TUMOR OF THE SPINAL CORD.

In June last a short note appeared in the *London Lancet* stating that Mr. Victor Horsley had successfully removed a tumor from the spinal canal of a patient of Dr. Gowers. The patient had suffered intensely for some three years from pain which was present immediately below and internal to the inferior angle of the left scapula, and was accompanied by absolute loss of sensation and motion of the body and limbs below that level. The upper border of the anæsthesia was distinctly in the region of the fifth intercostal nerve on the left side; on the right it was less accurately defined. All the symptoms pointed to a tumor of the cord, and it was decided to operate. The operation was performed by a long incision in the mid-line of the back, having its centre about the fifth dorsal, down to the spines of the vertebrae; the muscles were cleared off the laminæ and retracted; the spines were removed by fine forceps and then the laminæ trephined; an incision was made through the membranes and the cord examined, but the tumor did not come into sight till the laminæ of the third vertebra had been removed. The tumor was found on the posterior root of the nerve about the level of the third dorsal, and was about the size of the little finger. It was a small oval myxoma, compressing and making a deep impression on the left side of the spinal cord below the third vertebra. It was easily shelled out. The wound in the membranes was not sutured. The wound healed rapidly. For three or four weeks the former acute pain did not lessen, and even at times

seemed more agonizing (*Brit. Med. Jour.*, Jan. 28, 1888), but after that it gradually and intermittently decreased, and now after seven months is entirely gone. The sensation and motion of the body are almost completely restored. The patient was shown to the members of the London Medical and Chirurgical Society at the meeting held Tuesday, January 24th, 1888. This is the first case of the kind that has been published. It has been stated that Dr. Wm. MacEwen of Glasgow has also performed a somewhat similar operation.

OPERATIVE TREATMENT OF EMPYEMA.

E. Rochelt (*Wiener Med. Presse*, 1887, Nos. 32 and 33) says that in operations for empyema the free entrance of air through the incision in the thorax is a hindrance to the expansion of the lung. He himself operates in the following manner: An incision is first made down to the pleura, and a rib is resected sub-periosteally. He then opens the pleural cavity with a trocar, through the lumen of which a tube is pushed, which must be filled with an antiseptic fluid and closed with a compression stop-cock. Then it is connected with the bottle of an aspirator and the pus evacuated. After all the pus has been taken away the bottle is removed and another substituted containing 1 to 5000 of sublimate solution and attached to the drainage-tube, and by elevating and depressing this, water is introduced or taken away from the thorax, and thus the pleural cavity is washed out. Then the drainage-tube is again closed by the compression stop-cock. The tube is then cut off so that it reaches into the cavity, and to the outer end a short piece of hard rubber tube supplied with a thick valve is attached and the stop-cock removed. The wound is now sewed up and antiseptic dressings applied. The pleura can be washed out any time when necessary, and if desired, a drainage-tube may be subsequently introduced. The trocar is 1 cm. in diameter, and the hard rubber tube with the valve is 1 cm. long. With each expiration it allows pus to flow through, but during inspiration it is closed and no air can enter the cavity. Rochelt recommends this method of treatment in all cases of recent pyo-thorax.—(*Centralblatt f. Chirurgie*, No. 1, 1888.)

A SIMPLE METHOD OF OBTAINING CERTAIN ASEPSIS.

Under this heading Prof. Kocher of Berne publishes an article in the *Correspondenz-Blatt für Schweizer Ärzte. Jahrg. XVIII*, 1888. The simple method consists in the discarding of catgut ligatures and using silk. The burthen of his song is "*Fort mit dem catgut*," as that of Bruns was "*Fort mit dem spray*." He also says "Away with all preparations of gauze." He gives a number of cases treated with catgut, in many of which the result was anything but good; wound infection was common, and healing by first intention was not the rule. When the catgut was replaced by silk, then the results were much different. All the wounds went on well and healed by first intention, and a table of 62 cases where silk was used is appended. In all the cases where primary union could be expected, the wounds healed completely, and without suppuration; a colleague who was visiting his hospital asked him if they never saw any suppuration.

Prof. Kocher advocates the use of glass drains with large holes because they can be so easily cleaned and rendered aseptic. It is his custom in those cases where a drain is needed to remove the tube completely at the end of twenty-four hours, and the stitches at the end of forty-eight hours. He says that the catgut cannot be easily sterilized, especially if kept in oil or alcohol, and that the reason the change to silk gave better results was that it could be sterilized with ease by boiling or otherwise. It is most important to have the ligatures aseptic, for they lie deeply in the wound, and infection conveyed to the deeper parts is much more serious than any other kind. Too much silk must not be used for ligatures, but the hemorrhage from all the smaller vessels should be arrested by torsion. He prepares his sponges by simply washing them well with soap and water, rinsing them out, and then putting them in a 5 per cent. solution of acid carbolic. Before operation he passes the sponges through a roller press, and then places them in a clean enamel vessel. He does not use sponges to disinfect, but is satisfied if they do not infect. The smooth polished instruments are cleansed with soap and water, and put in a solution of carbolic acid; the more complicated instruments are boiled for three hours in simple water.

To disinfect the hands, he uses brush, soap and water, then washes them in alcohol, and then in a sublimate solution (1 per cent.) He prefers wood-wool or moss as dressing, and does not rely much on the prepared gauze. Although, in many cases, he does not use drains, when he does use them he introduces them by a separate opening a short distance from the operation wound; the wound he always closes with a continuous suture, one row deep and one superficial.

In conclusion, he gives directions as to the preparation of the operating room and the vessels and solutions used, also the ligatures, sponges, instruments, etc.

TREATMENT OF TUBERCULAR AND SUPPURATIVE PERITONITIS BY INCISION.

In tubercular peritonitis, this method of treatment has been gradually developed from observations of the improvement in such cases following exploratory incision. The operation is looked upon by most surgeons as merely palliative. One of Wells' patients lived ten years after. In all the cases hitherto reported there has been no recurrence of the transudation. Free incision and drainage gives much better results than mere punctures. Up to the present seventeen cases have been reported, most of them made for explorative purposes.—(*Wiener Med. Woch.*, 1887, Nos. 13-16.)

Within the last few years two cases have been operated on in the Montreal General Hospital with good results. In both the abdomen was opened for explorative purposes.

Dr. Kuemmell (Hamburg) has operated on two cases of his own and has notes of twenty-eight other cases. Of these thirty cases only two died from the operation; three died of general tuberculosis twelve, eight, and five months after. In two, local trouble did not recur, though the pulmonary affection went on, and at the time of reporting there were twenty-five relative cures. The external signs of peritoneal tuberculosis are usually those of an encapsulated ascites simulating a cyst. In but few cases was this part of a general tuberculosis, and in none was the latter hastened by the operation, but always improved. At the same

meeting, Esmarch added three cases, Mikulicz two, and Wagner one,—all with one exception cures.—(Proceedings of sixteenth German Surgical Congress in *Centralbl. f. Chirurgie*, No. 25, 1887; quoted in *Annals of Surgery*, Dec., 1887.)

Operative Treatment of Suppurative Peritonitis.—Professor Krönlein of Zurich (*Archiv f. Klin. Chir.*, 1886, Bd. 33, Hft. 2) relates three cases of putrid-purulent peritonitis with one success. The successful case was that of a laborer aged 18, who, after eating freely of cherries, was attacked with pain and vomiting, symptoms of peritonitis gradually developed, great tympanitis, finally feculent vomiting and severe prostration. Laparotomy on the nineteenth day; long incision and escape of fetid sanguino-serous fluid. Exudation found everywhere. No occlusion or perforation found. In spite of the apparent hopelessness of the case, the abdomen was carefully washed with a weak solution of bichloride and wound closed. No drainage. Patient did well, and three and a half months after was in perfect health.—(*Annals of Surgery*, June, 1887.)

At a meeting of the Clinical Society of London, held October 28th, 1887, Mr. Richard Barwell reported a case of suppurative peritonitis, where he opened the abdominal cavity, washed and sponged out the peritoneum, and patient made a good recovery. Patient was aged 42, and a hard drinker; admitted into Charing-Cross Hospital June 24th, 1887. Six days previously he fell and struck the left lower part of the abdomen, but seemed little hurt. Five days later felt severe pain and vomited. Soon his abdomen became distended and urine ceased to be secreted. Catheter brought away no urine; had previously passed bloody urine. Abdomen opened and a large quantity of gas escaped. No rupture of any viscus found, but a quantity of pus in lower part of peritoneum. Washed and sponged out with ten pints of distilled water. Abdomen sewn up without drain. Patient made a good recovery. Mr. Barwell said he objected to drains, as they could not drain the lower part of peritoneum through a wound in front of the abdomen. If distension occurred, the lower stitches should be removed.

Mr. Lawford Knaggs, at same meeting, related the case of a

girl aged 16, with amenorrhœa of four months standing, who came under treatment for a left-sided abdominal swelling. Some fluid was aspirated, and the diagnosis of ovarian cyst made. The abdomen was opened, and the peritoneum was seen to be covered with myriads of pale-pink gelatinous-looking tubercles the size of hemp seeds. The ascitic fluid was removed and the peritoneal cavity washed out with many pints of warm water. Improvement followed immediately. Fifteen months after there was no return of the ascites or abdominal disease. Her lungs were beginning to be affected and she had lost weight. The author spoke of another case of tubercular peritonitis operated on by him two and a half years ago; the patient is a strong, healthy woman now. Homans of Boston reported a case well three years after operation. Spencer Wells one alive and well twenty-two years after operation. Mr. Tait claimed a uniform success as far as operation is concerned in all cases and a complete cure of the disease in 80 per cent of all cases of tubercular peritonitis.

The reason why these cases of tubercular peritonitis are cured by operation is not very plain. Some say it is due to mechanical irritation and washing out, but whatever is the cause, there is not the least doubt that operation in these cases does great good, and is very often curative. Incision and drainage is also the proper treatment to adopt in cases of simple suppurative peritonitis; the only difficulty is to know when to interfere, as many cases are at first obscure, and in some cases peritonitis can exist without any prominent symptoms. It is much safer in these case to use a glass drain. The fluid can be easily drawn away at intervals by means of a long-nozzled syringe. Some cases, however, appear to do well without drainage.

In the *Lancet* of Feb. 11th, 1888, referring to the above papers, Dr. Homans of Boston reports two more cases of *Laparotomy for Tubercular Peritonitis*. One was a girl of 21, operated on in June 1884, and when seen in November 1886, she weighed 130 lbs, and was in perfect health. There was still a sinus at the site of the old wound, which discharged a small quantity of pus daily. No drainage was used in this case, but afterwards the wound reopened and discharged the ascitic fluid

which had accumulated. The second case was that of a girl aged 17, whose abdomen was opened for supposed ovarian tumor, but only ascitic fluid found and the whole abdominal cavity was studded with white nodules. These on examination by Prof. Fitz proved to be tubercles. A drainage-tube was introduced, but was removed on the second day. Eight months after the operation the patient was in good health and abdomen normal. With regard to drainage in cases of tubercular peritonitis, Dr. Homans says he has never been able to establish an artificial drain in a case of ascites by the insertion of a drainage-tube; when nature means to cure the patient by drainage she reopens the wound.

At a meeting of the Philadelphia County Medical Society, Dr. E. T. Bruen reported a fatal case (*Medical News*, Nov. 26, 1887) of laparotomy for tubercular peritonitis. The patient was a man aged 34, with tuberculosis of the lungs and ascites. The fluid rapidly re-collected after tapping, so abdomen was opened and washed out. Patient died of acute peritonitis nine days after.

ABDOMINAL SECTION FOR PERFORATED TYPHOID ULCER.

Dr. T. G. Morton reports a case of the above in the *Medical News* of December 24th, 1887. The patient was a man aged 23, in good physical condition. The operation was performed twenty-four hours after the perforation. The abdomen was opened in the median line and a perforation discovered about three feet from the ileo-cæcal valve. It was about three-eighths of an inch in diameter, and occupied the lower end of a large ulcerated patch. The ulcer was closed by turning the whole area of the ulceration into the bowel by eight Lembert sutures. The ulcers in the bowel were seen outlined in the peritoneal surface by a deep dusky-red slightly swollen area. One looked as if it would soon perforate, so also was turned in by Lembert sutures. The abdomen then was thoroughly cleansed with water and the abdominal wound closed. The patient died collapsed six hours after the operation. Only two other such cases are on record, viz., the first performed by Kussmaul of Strassburg in October 1885. In this case the ulcer was excised; patient

died eleven hours after. The second case was under the care of Mr. Bartleet of Birmingham. In this case the point of perforation was not found, so the cavity of the abdomen was washed out and a drain inserted ; patient died two days after.

OPERATIVE TREATMENT OF ELEPHANTIASIS.

Dr. Helferich, after discussing the various treatments of elephantiasis (*Deutsche Med. Woch.*, 12th January, 1888) advocates treatment by linear excision. In these cases the skin has lost its elasticity and compression is of little use. Dr. Helferich reports a case in which operative treatment was employed with good results. The patient was a girl 27 years old, who had since 10 years of age suffered at least once a year from erysipelas of the leg, which afterwards spread over the body, and after each attack the leg was larger than before. All methods of treatment proved useless. The skin of the face, arms and hands was also much thickened. On the 27th of November, 1885, he excised a long strip of skin reaching from knee to ankle and thence to the root of the toes of right leg, and on the 22nd of January, 1886, performed the same operation on left leg. The edges were brought together and united perfectly, afterwards the muscles were exercised by means of electricity and kneading, and patient walked about with comfort. The illustration accompanying the paper shows the marked improvement effected by the operation.

STATISTICS OF TRACHEOTOMY.

At a recent meeting of the Italian Surgical Society in Genoa Dr. Cabelli presented some statistics of tracheotomy which he had collected. In the first series of 132 cases there were 50 deaths and 82 recoveries. In the second series of 18 cases, 5 deaths and 13 recoveries. In the first series the recoveries rendered 62.2 per cent., and in the second 72.3 per cent.

INTUBATION OF THE LARYNX FOR CROUP AND DIPHTHERIA.

This method of treatment introduced by Dr. O'Dwyer of New York a short time ago has become very popular, so much so that

in many places it has altogether superseded tracheotomy. The objections to intubation are not a few. First, the difficulty of introducing the tubes ; second, the difficulty of feeding in many cases ; and third, the danger of food passing through the tube into the trachea. Again, in some cases where the membrane is becoming loose, it may be pushed in front of the tube and so block up the passage. The operation is more suitable in those cases where the membrane is confined to the larynx itself. The operation is one that will be much more popular with the laity than tracheotomy, because no cutting is required, and very few parents would object to the apparently much less formidable procedure of passing a tube through the obstructed passage. Considerable manipulative skill is required not only to introduce the tube, which is quite short, and is dropped into the rima glottidis and there hangs free, being prevented from passing through by a flange on the upper end. The instruments required are expensive, and consist of (1) mouth gag, (2) introducer, (3) five larynx tubes of various sizes, (4) extractor. The results so far have not been better than those obtained by tracheotomy since the introduction of antiseptics. Of course statistics in such operations are of little value, for everything depends on the character of the cases and the time of operation.

In the *New York Medical Record* for Oct. 29th, 1887, Dr. O'Dwyer records fifty cases of croup in private practice treated by intubation. He states he has never resorted to intubation until the symptoms of laryngeal obstruction were so urgent as to plainly indicate impending suffocation unless the child were relieved by operation. In his series of 50 cases he had 38 deaths ; 18 due to extension of the membrane, 5 to exhaustion, 5 to nephritic complication, 4 to pneumonia, 3 to sepsis, 1 to œdema of the lungs, and 2 unknown, as they were not seen after operation. The 38 cases that died lived on an average two days and seven hours after intubation. In the 12 cases that recovered, the tube was retained on an average of five days and seven hours. After describing his method of practising intubation, he goes on to speak of the dangers of the operation, which are as follows :

- (1) Danger of apnoea from prolonged efforts at intubation.

(2) The anxiety to succeed quickly will tempt the operator to use force, thereby running the risk of making a false passage.

(3) Injury to the larynx in removing the tube by passing the extractor down on the outside of the latter, opening it widely and removing it by force.

(4) The most serious of the unavoidable accidents liable to occur is pushing down the membrane before the tube in sufficient quantity to produce asphyxia. (This accident happened to the author only once in 132 cases.)

(5) Coughing out the tube before the stenosis has been permanently relieved.

(6) Blocking up the tube with masses of pseudo-membrane.

(7) The lumen of the tube sometimes becomes slowly, but seriously, encroached upon by adhesion of the tenacious secretions in those cases of croup which are called dry, particularly if there be little cough.

SURGICAL TREATMENT OF BRONCHOCELE.

Professor Obalinsky of Krakow, in speaking of the various methods of treating bronchocele, strongly advocates that introduced by Prof. Wölfler. This method consists in ligaturing the four thyroid arteries. He reports two cases. One of a girl aged 22, in whom a substernal bronchocele caused severe respiratory difficulties. An incision was carried along the inner border of the sterno-mastoid muscle, which enabled him to tie both arteries. In two weeks the tumor had decreased three-quarters of an inch. The second case was that of a woman suffering from a large struma of right lobe. Both right thyroid arteries were tied. The wound healed by first intention, and when discharged the tumor was reduced by one-half. In one case Socin's method of enucleation was followed. A peasant aged 21; many tumors were shelled out, with very little hemorrhage, and recovery took place in a fortnight. The respiration was then normal.—(*Wiener Med. Presse*, Nos. 30-31, 1887.)

SUBDIAPHRAGMATIC ABSCESS.

Plinatus reports a case of the above (*St. Petersburg Med.*

Woch., No. 4, 1887). Patient a man aged 32 years, who had always been healthy. Had high remitting fever, and pain referred to the right hypochondrium in the neighborhood of the hepatic flexure of the colon. The liver region was very prominent. Six weeks after the beginning of the illness the liver dulness reached as high as the fifth rib in the mammary line, the seventh in the axillary line, and the eleventh rib near the vertebral column. The liver dulness extended nearly an inch below the edge of the ribs, so that the whole vertical extent of liver dulness was about $6\frac{1}{2}$ inches. The symptoms were obscure as to whether there was an exudation in the pleura, but there were no distinct evidences of pleurisy. There was no pain on deep inspiration, the heart was in its normal position, the pulse was not frequent, and the line of dulness was not altered by position. At the end of twelve weeks the evening temperature was still high. Exploratory puncture was made in the fifth, sixth and seventh intercostal spaces in the axillary line. The first gave only serum, the second blood, and the third pus. The eighth rib was resected, but the pleural cavity was not opened, because the two layers of pleura had become fused; the diaphragm was divided and the abscess cavity reached,—it was about five inches deep. A large quantity of pus was evacuated, and the patient made a rapid and complete recovery.

(A somewhat similar case was reported by myself in the *Medical News*, Dec. 17th, 1887.)

ONE HUNDRED CASES OF OPERATION FOR STONE IN THE BLADDER WITHOUT A DEATH.

Surgeon-Major P. J. Freyer, M.D., reports the above in the *Brit. Med. Jour.* of Dec. 24th, 1887. Of these there were—61 litholapoxies in adult males, 16 ditto in male children, 22 lithotomies in male children, and 1 supra-pubic cystotomy in a male.

Radical Cure of Hernia.—The radical cure of hernia is a subject which has for years interested surgeons, and many operations have been devised to permanently cure herniæ. Up to quite recently these were all comparatively unsuccessful, especially in cases of large irreducible herniæ. The operations of Wutzer and others, though much lauded at the time, are now admitted to have been failures. Wood's operation was more successful, but never as successful in the hands of other surgeons as in those of the originator. The radical cure of hernia by the introduction into the inguinal canal of some astringent and irritant solution was practiced secretly with success by men such as Heaton of Boston, but although this method is still practised by some surgeons, its results are uncertain, and it is not applicable to large herniæ or those which are irreducible. With the introduction of modern antiseptic surgery, bolder and more successful measures were practised. The results of these methods, which have been carried out for the last few years by hospital surgeons, are now becoming apparent, and papers are being published giving series of cases treated by cutting down on the hernia and dissecting out the sac, replacing the bowel, then ligaturing the neck of the sac and extirpating it. In many cases the canal at the same time is closed by sutures. This method of treating hernia was largely discussed at the last meeting of the British Medical Association, held in Dublin, and many very valuable papers were read. I propose in the present retrospect to give a synopsis of the various methods practised by modern surgeons for the radical cure of hernia.

Mr. Mitchell Banks, who was one of the first to extensively perform this modern operation for the radical cure, and who has had a very wide experience, read a paper detailing his methods and giving the results of his practice. (*Brit. Med. Journal*, Dec. 10, 1887.) His method in inguinal hernia is, first, to cleanly dissect out the sac, replace the bowel, and tie and cut

off the adherent omentum ; the sac is then pulled down, ligatured as high up in the canal as possible, and removed ; finally the pillars of the ring are brought together by two or three silver sutures, which are left in position. In *femoral hernia*, the cleansing and removal of the sac constitutes the whole operation, and no attempt is made to close the femoral aperture. In *ventral* and *umbilical hernia* use is frequently made of the whole or part of the sac as a plug to stop the aperture, which is generally large. This method for the radical cure of hernia Mr. Banks considers the simplest yet devised ; the more complicated operations he thinks are most successful in the hands of their inventors. He claims no originality for the operation. He presented a table of 106 cases, 68 of which were herniæ without strangulation, while in 38 strangulation was present. The non-strangulated cases he divides into two groups—the first where the herniæ were of moderate size, and the second where the herniæ were very large or even of enormous size. In the first group the operation is comparatively easy, and the mortality is not great ; but in the second group, where the herniæ were of large size, so large that no truss or any support was of any value, and the patients were unfitted for the duties of life, the operation was usually difficult and prolonged, and the dangers great. In the first class, non-strangulated herniæ of small size, there were 52 operations with 2 deaths ; one was a weakly child aged 2, who had a landslip of the cæcum into the scrotum, and who died of shock, and the other was a man aged 47, suffering from locomotor ataxy. In the second class, very large and enormous herniæ, not capable of support by trusses, there were 16 cases. Here the mortality was great—four deaths, 25 per cent. In one case the amount of bowel was so great that it could not be returned into the abdomen, and the operation had to be abandoned. In large operations he leaves the wound open. In the third class, strangulated herniæ, there were 38 cases with 3 deaths. One of these was practically moribund at the time of the operation ; another case was an old bronchitic aged 77.

Now as regards the actual utility of the operation. Of the 66 cases Mr. Banks has been able to follow up, 44 were com-

pletely successful from a curative point of view, and 7 were partially successful ; that is, they could wear a truss, where before they could not.

Mr. Banks thinks that operative procedures are seldom required in children, and he thinks a well-fitting truss in the vast majority of cases will effect a cure. He always urges the operation in cases of small femoral herniæ with adherent omentum, as they are never safe from sudden strangulation. No one should be subjected to the operation who can wear a truss with comfort, which keeps his bowels securely in position.

Mr. Banks strongly recommends that a light support should be worn after operations, and he does not believe that this destroys adhesions, as some teach. Mr. Banks is more conservative than most surgeons who practice the operation of radical cure, and limits its performance to certain cases only ; in this way he thinks more good will be done than by indiscriminate cutting.

Macewen's Operation.—At the same meeting, Dr. William Macewen of Glasgow described his operation for the radical cure of oblique inguinal hernia. (*Brit. Med. Jour.*, Dec. 10, '87.) This operation has already been described in the August number of the *Annals of Surgery* for 1886.

Dr. Macewen says that in the various kinds of operation for radical cure of hernia at present performed, the sac is either retained in the canal, being dealt with in various ways, or a ligature is placed on its neck and the remainder of the sac removed. In his operation the sac is preserved and completely returned beyond the limits of the canal, where it forms a pad, which is placed on the abdominal aspect of the circumference of the internal ring. When the sac is left in the canal it acts as a plug, and plugs tend to widen instead of obliterating the canal. Before operating, the hair of the pubis and neighboring parts should be closely shaved, the skin washed with soap and water and nail brush. After drying, turpentine should be smeared over the parts, and after a little methylated spirit to clear away the turpentine. The parts are then covered with lint soaked in an antiseptic solution until the patient is ready for operation. Dr. Macewen has special needles for the performance of his

operation ; they are right and left, and curved at right angles to the shaft. Wood's or Reverdin's needle might be used for this operation. After having reduced the bowel, an incision is made sufficient to expose the external abdominal ring. The operation is divided in two parts—one to establish a pad on the abdominal aspects of the internal ring and the other to close the inguinal canal. To form the pad, (*a*) the distal extremity of the sac is first freed and elevated, then the sac is pulled down and the finger is introduced into the inguinal canal, and the sac is separated from the cord and the parietes of the canal ; (*b*) the finger is introduced outside the sac until it reaches the internal ring, then with the tip the peritoneum is separated for half an inch all around the ring ; (*c*) a stitch is secured firmly to the distal extremity of the sac, the end of the thread is then passed in a proximal direction several times through the sac, so that when pulled upon the sac is folded or puckered up like the top of a curtain, the free end of this stitch is threaded in a hernia needle introduced through the canal to the abdominal aspect of the fascia transversalis, and there it is made to penetrate the anterior abdominal wall about an inch above the upper border of the internal ring, the wound in the skin is pulled up so as to allow the point of the needle to project through the abdominal muscles without penetrating the skin, the thread is then taken out of the needle and the needle withdrawn. Traction is now made on the thread, the sac wrinkles up and is thrown into a number of folds. An assistant maintains traction upon the stitch until the sutures closing the inguinal canal are introduced, and then the end of the stitch is secured by introducing its free extremity several times through the superficial layers of the external oblique muscles. In this way a pad of peritoneum is placed upon the abdominal side of the internal ring and becomes attached there, the surfaces having been freshened. The closure of the canal is now undertaken. This is effected by means of the hernia needles passed through the *conjoined tendon* in such a way as to leave a loop in the abdominal aspect and two free ends externally ; these are separately passed from within out through Poupart's ligament and tied there in a reef knot. The

material used for sutures is catgut. The wound is drained with a bone drain, dusted with iodoform, and dressed with a sublimate wool pad; the wound is not dressed again for two weeks. The patient is kept in bed four to six weeks, and is told not to lift anything for several months.

Dr. Macewen has performed his operation in 49 cases of non-strangulated and 16 of strangulated hernia, making in all 65 cases; 16 other cases were operated on by forming this pad for femoral hernia. In one case only did the operation fail, and no case died. Of the 49 non-strangulated cases, 19 have been kept under observation for no less than one year, and 20 from one to five years; all were successful. Of the strangulated cases, 14 have been kept under observation from one to four years. Of the femoral cases, 6 were under observation from one to three years. All the cases when last examined were found to have the rings firm, with no impulse on coughing. Out of 48 non-strangulated cases, in which the operation for radical cure was performed, one only was found afterwards to wear an external pad; the parts, however, were firm.

Dr. Macewen's results are remarkable; no deaths and only one failure. I had the pleasure of seeing some of his cases last summer and can testify to the efficiency of the operation. The good results, however, are as much due to Dr. Macewen's wonderful skill and care as to the operation itself, which is an excellent one, and not very difficult to carry out if once seen.

Ball's Operation by Torsion of the Sac.—Mr. C. B. Ball of Dublin (*Brit. Med. Jour.*, Dec. 10, '87) has devised an operation which is as follows: The sac must be completely isolated from the structures comprising the spermatic cord by narrow-bladed blunt scissors. Having ascertained the sac is empty, grasp the neck with a pair of broad catch forceps and gradually twist it up. While this is being done, the left forefinger should be used to free the upper portions of the sac. Four or five complete revolutions are sufficient in most cases. The torsion forceps is now transferred to an assistant, and a stout catgut ligature is placed around the twisted sac as high up as possible, tied tightly and the ends cut short. Two sutures of strong

aseptic silk are now passed through the skin at a distance of about an inch from the outer margin of the wound, through the outer pillar of the ring, through the twisted sac in front of the ligature, and then through the inner pillar of the ring and skin upon the inside. The sac is now cut off in front of these sutures, and a catgut drain is brought out through a separate opening at the back of the scrotum and the two sutures closed over lead plates which lie at right angles to the wound. The pain is not great. Dry dressings are used and allowed to remain in for ten days or a fortnight. Mr. Ball has operated on 22 cases for radical cure without a death, and in only three had a truss afterwards to be worn. He does not approve of wearing a truss after operation unless there is a return. In congenital hernia he divides the sac circumferentially close to the testicle, as do most operators, and then the serous membrane above is separated well up to the internal ring and twisted.

Mr. Ball holds that the effect of torsion of the sac in closing the hernial canal and tightening up the peritoneum is greater than in any other operation, and that it fails in relatively few cases. He treated three cases of strangulated hernia in this way with one death, where the patient had kidney disease. The patient died on the eighteenth day, and the specimen which he obtained showed the far reaching effect of torsion of the sac remarkably well.

At the same meeting of the British Association several other papers were read. Mr. Kendal Franks of Dublin described a method of *Cure of Hernia by Dissection*. He holds that in competent hands the operation is perfectly safe. Mr. Franks does not regard a case as cured if a truss has to be worn. In his operation the skin incision is made on a higher level than the canal. The sac is then cleared from the surrounding parts, opened, and the finger passed through until the margins of the internal ring can be felt. A silver wire is then passed through one pillar of the ring and through one side of the sac, then the needle is passed through the other pillar of the ring and through the other side of the sac; it is threaded with the same wire and withdrawn. When this suture is tightened, it not only closes

the ring but fastens the sac. The sac is excised below the sutures. In cases of congenital hernia, instead of dissecting out the cord, the sac is divided across above the testicle; the upper part is peeled off and the lower sutured to form a new tunic for the testicle. To close the inguinal canal and ring, the upper part of the internal ring is first closed by passing the silver wire straight through the aponeurosis of the external oblique; directly over the ring the needle, armed with the wire, is passed through Poupart's ligament and appears in the canal, where the wire is withdrawn. The needle is now passed through the external oblique aponeurosis on the other side of the ring, threaded with the wire and withdrawn. A second one is passed in the same manner lower down. A third suture closes the external ring. Mr. Franks has had twenty cases without a death.

Barker's Operation.—Mr. Arthur E. Barker of London reported *Thirty-five Operations for the Radical Cure of Hernia by Original Methods*. (*Brit. Med. Jour.*, Dec. 3rd, 1887.) He states that he has in no instance attempted a radical cure of a hernia unless there was some special reason for abandoning the palliative treatment. He excludes from his list all cases in which a radical cure has followed herniotomy for strangulation. Mr. Barker has had no deaths due to the operation, and no symptoms causing any anxiety. In only two out of the 35 cases did the hernia return. The list comprises 12 congenital and 15 acquired inguinal hernia, 1 femoral and 3 umbilical. Twenty of the cases were under 10 and nine above 20; the youngest was four months and the oldest 70 years. Silk was used in all cases, as he considers it more certain than catgut or kangaroo tendon. The peculiarities of Mr. Barker's operation are as follows: Having cleared the neck of the sac, a stout silk ligature is passed under it, close to the external ring, care being taken not to include the vas deferens. Before this ligature is tied the sac is opened longitudinally below the ligature sufficiently to see clearly that the neck is free from gut or omentum, which, if present, are reduced completely or the omentum cut away. When the neck is quite clear the ligature is tied round it firmly *en masse*, the ends being left uncut. The sac is now cut across

half an inch below the point of ligature and the lower scrotal portion left to take care of itself. One of the ends of the ligature hanging from the stump of the neck of the sac is now threaded in a Lister's needle, and the latter passed up the inguinal canal in front of the cord, guided by the left index finger, which pushes the stump of the sac before it. The internal ring is felt for and the needle is forced through one border of the ring and out through the external oblique muscle, it is then unthreaded and withdrawn, and is again threaded with the other end of the ligature; this is carried in the same way through the opposite border of the internal ring and through the external oblique muscle, the needle unthreaded, and then both threads are pulled up (the stump is thus drawn into the abdomen), the two ends tied together in a secure knot, and thus the internal ring is closed. The canal is closed by four to six stitches passed in front of the cord. Dry dressing is applied and not removed for ten days: drainage is unnecessary. The patient remains recumbent for three weeks to a month. In three cases where the hernia returned a second operation was necessary. Of the 20 cases which have been followed up, none have shown any return of the hernia. The longest time after operation, however, was only twenty months.

Since the paper was read before the British Association Mr. Barker has had six other cases, all successful. So Mr. Barker has had 41 cases with no deaths, a remarkably good showing. As to the results of the operation regarding permanent cure, the time that has elapsed is not yet sufficiently long to judge, but there had been altogether five returns up to date of paper (Dec. 3, '87).

Mr. Mayo Robson of Leeds reports (*Brit. Med. Jour.*, Dec. 17, 1887) *Twenty-six Consecutive Operations for the Radical Cure of Hernia*. Half the cases were performed after herniotomy for strangulation, and the others in non-strangulated cases for irreducible or troublesome herniæ, where no truss could be satisfactorily applied. In all but two cases where Wood's operation was performed, the sac was excised after its neck had been ligatured, the canal being sutured only if very open. In every

case strict Listerism was followed out, and as a rule not more than one or two dressings were required. The ages of patients varied from three months to 76 years. The ruptures were ventral, femoral, inguinal and inguino-scrotal. The greater number were permanently cured, but there were five cases where a truss was advised, and one case of return, but which a truss kept up easily. Three deaths occurred, two in the strangulated and one in the non-strangulated. Two died of acute bronchitis.

Mr. Chauncy Puzy of Liverpool reports 24 cases of operation for radical cure in non-strangulated herniæ, and in only half did he find it necessary to suture the pillars of the ring. When ligaturing the neck of the sac he advises that the finger should be pushed up in the sac as high as the internal ring, whilst an assistant presses the ligature beyond the tip of the finger, and thus ties the sac internal to the ring itself; if the sac is hard and unyielding, and there is a chance of the ligature slipping, he transfixes the neck of the sac and ties the neck in two halves first and then passes the ligature around the whole sac. He believes in prolonged rest in bed after operation, two months if possible. It is to this especially that he attributes his satisfactory results.

Dr. Rabagliati of Bradford (*Brit. Med. Jour.*, Dec. 3, '87) reports 10 cases of radical cure, all successful. Three were non-strangulated and seven strangulated; in four cases the hernia was femoral and six inguinal.

Mr. Wm. T. Stoker of Dublin read a paper on the *Theory and Practice of Operation for the Radical Cure of Hernia*. He sums up as follows: (1) That, particularly in young children, operation should only be undertaken when minor measures have failed or are inapplicable. (2) That on the ground of its safety, certainty and precision, the operation by dissection is to be preferred. (3) That twisting the sac is a safe and efficient aid to the operation. (4) That sutures, so far as their use in closing the canal is concerned, serve but a temporary purpose, and that their chief end is to excite a sufficient lymph exudation. (5) That sutures, therefore, need not be introduced tightly, and that trouble from testicular swelling may be thus avoided. (6) That

the permanent retention of wires is unnecessary, possibly hurtful, and bad in theory and practice. (7) That while a uniform support to the inguinal region is desirable for some time following the operation, it cannot safely be afforded by a truss furnished with a pad.—(*Brit. Med. Journal*, Dec. 3, '87.)

At the third French Congress of Surgery held in Paris, March, 1888, a discussion took place on the *Value of the Radical Cure of Herniæ with regard to their Final Cure*. (*Medical News*, April 21, '88.) Dr. Socin of Bâle, Switzerland, said he had operated 75 times for the radical cure of non-strangulated cases, and 85 times for strangulated ones. In the first series he had two deaths and the second eleven. He had seen after operation 133 of his 147 patients; some a few months after, others one year, and others at the end of nine years. Many were entirely cured, while others derived much benefit from the operation. Dr. Socin said the operation ought to be performed in every strangulated hernia, except where the intestines should not be reduced. The resection of the sac in such cases, instead of being a danger, offers a new chance of success. With regard to the cure of non-strangulated cases, the indications for operation are: young subjects below twenty, whose rupture cannot be satisfactorily controlled by bandage or truss, and in adults where the truss does not retain the hernia completely in an easy and non-painful position. The chances of success are much greater in the young, when the hernia is small and recent; of these he obtained 62 per cent. of perfect cures. In elderly subjects his successes have been only 42 per cent.

Dr. Socin's operation consists in the total extirpation of the sac below its neck. Suture of the pillars of the ring are only occasionally necessary. In cases of testicular ectropia with atrophy, the testicle must be removed with the sac. (Dr. Socin's operation and results are described at length in an article in the *Deutsche Zeitschr. f. Chirg.*, Hft. 3 and 4, 1886.)

Dr. Thiriar of Brussels said that during the last two years he had operated in 26 cases of hernia; 12 were strangulated and 14 not. In 21 cases he performed the radical cure, with one death in an old man. He always sutures the rings and drains

through the scrotum. He only operates when the hernia is irreducible, congenital with testicular ectopia, or when it can be maintained in position with difficulty by a truss.

Dr. Leonté of Bucharest operates as follows: After incision of sac and reduction of the hernia, the internal surfaces of the sac, as well as of its neck, are exposed. He then incises in a circular manner the serous membrane mass on a level with the neck, and separates it from the adjacent cellular tissue. The serous membrane rolls it on itself and the superior orifice is thus obliterated. He then passes a ligature of catgut around all the surface which has been denuded, and drawing the two ends together the opening is closed like a purse. He does not extirpate the sac, but, after scraping it, sews the walls of the sac and the skin in the same suture. By this method he has had seven successes in seven cases, and has as yet seen no return. One case was operated on two and a half years ago.

Dr. Mollière of Lyons operates thus: (1) He isolates the sac first without opening it. (2) The sac is then opened in its most prominent part and the contained viscera examined. (3) In strangulated cases the constriction is incised outside the sac and the neck dilated with a blunt instrument. (4) Finally the sac is ligated with an elastic thread tightly applied.

Dr. Routhier of Paris has performed 14 operations for the radical cure, and advises total extirpation of the sac with ligature of the neck. He does not suture the pillars. He has had only one return. Two cases of umbilical hernia were completely cured.

Prof. Trelat of Paris does not like the term "radical cure," but prefers the words "operative or surgical cure." Cases easily reducible and maintained by a truss should not be operated on. He advises interference in all cases of irreducible herniæ, however small, and in hernia where a truss fails to support. He had collected 307 cases from various sources (17 of his own) without one death. He knows of no more successful surgical operation, although death is possible in certain grave cases.

Dr. J. Boeckel of Strasburg has done twelve operations for radical cure. He lost two patients, one from delirium tremens

and one from septicæmia ; in the ten surviving cases two had a return, three have had no return after ten, twelve and eighteen months, and three have had no return after six and seven years. All wear trusses.

Dr. Lucas-Championnière of Paris made a great distinction between strangulated and non-strangulated cases. He has made 81 operations for radical cure, with one death—a huge tumor in an emphysematous subject. In six weeks one can judge whether the operation is a success or not. He did not see why we should not operate for radical cure in those cases which are outside the rules laid down for intervention ; he had operated on several children. Congenital hernia is an absolute indication. Hernias that grow rapidly should always be operated on. Radical cure has three enemies—pulmonary congestion, the occurrence of large intestine in the sac, which renders the operation difficult and the return of the trouble certain, and, finally, the organic breaking down of old hernial patients who are troubled with albuminuria or glycosuria. He always operates on small herniæ before their volume renders these operations dangerous and less efficacious.

Dr. Segond of Paris has operated 14 times in non-strangulated and 30 times in strangulated cases ; he had no death in his non-strangulated cases and five in the strangulated. Two of his 14 cases had been definitely cured. He applies ligature as high up the sac as possible. In dissecting out the sac it is not always easy to save the cord, and on two occasions he sacrificed it.

Drs. Swarz, Richelot and Le Bec also related cases.

Dr. Keen of Philadelphia reports a case of Macewen's operation for the radical cure of hernia which was followed by a speedy return (*Medical News*, March 18, '88), but still the hernia was improved. Dr. Keen also reports a case of *Omphalectomy* for strangulated umbilical hernia which was followed by death (*Med. News*, Feb. 25th, 1888). The patient was a woman aged 56, short and fat. The hernia had become strangulated and fæcal vomiting had set in. Several days after, the first symptoms of strangulation set in ; the operation was performed by cutting down

on the tumor, exposing inflamed omentum, and reaching a knuckle of bowel which protruded through the umbilical opening. The intestine was congested, but not dark in color ; it was reduced. The ring was large enough to admit the forefinger, but was so thick and unyielding that it could not be closed, so it was excised by an elliptical vertical incision six inches long ; the omentum was cut off and the wound closed, but the woman died next day. At the post-mortem the bowel was found gangrenous, the gall-bladder filled with stones, and the kidneys large and friable—right contained numerous calculi. Dr. Keen attributes the fatal result to the too late performance of the operation. Antipyrin was given, and was followed by collapse ; and perhaps this drug precipitated the collapse which preceded death.

I have taken up considerable space in describing the present status of the operation for the radical cure of hernia by the direct method ; but the subject has seriously occupied the attention of surgeons for some years, and the results of a large series of cases are only now being reported. On the whole, the verdict is favorable, not only as to the immediate good result, but as to the permanent cure or great improvement in the large majority of cases operated on. The operation of Mr. Banks appears to me to be the one which is the easiest of performance, and which gives as satisfactory results as any other method. It is an operation which any modern surgeon of ordinary skill can perform. It requires no complicated method of stitching or the use of any special instruments. The surgeon may modify it to suit himself, as, for instance, substituting silk or catgut for wire and treating the neck of the sac by fixing it to the internal ring in some such simple way as suggested by Mr. Barker.

Mr. Macewen's operation in his own hands has certainly been most successful, but I question whether other surgeons can get as good results.

In all the operations the principle seems to be to dissect out the sac and to cut it off after ligaturing the neck. The question of the utility of suturing the pillars of the ring is still disputed by some surgeons, but the point insisted on by Macewen is important, viz., that the conjoined tendon and not the external

oblique aponeurosis should be sutured to Poupart's ligament. The canal is much more effectually closed by this method. All cases should be well considered before undertaking operative procedures, and where no inconvenience is caused by the rupture it should not be interfered with. The rules laid down by Mr. Banks as to the cases that are suitable for operation should be remembered by all conservative surgeons. With regard to the danger of the operation, it is, of course, much greater in cases where the hernia is of large size and contains large intestine. Comparative statistics are very fallacious unless the same kind of herniæ are compared. One man may have a large series of successful cases in ordinary small reducible ruptures, but a few operations in large irreducible scrotal herniæ in fat individuals with emphysematous lungs will seriously affect his statistics. Mr. Banks does wisely to divide his cases into three classes, viz., strangulated, non-strangulated small, and non-strangulated large. The indiscriminate performance of the operation of radical cure in cases which can be easily controlled by a truss is much to be condemned. The difficulty of the operation in cases of old, large, irreducible herniæ is often very great. A short time ago I operated in such a case in a stout man, and had the greatest difficulty, even after cutting off all the omentum, in returning the bowels into an abdomen to which they had been strangers for some years. Nearly all the small intestines, with the whole transverse and descending colons, were in the sac, and it was only by inverting the patient that the bowels could be worked into an abdomen which seemed too small to contain them. When returned, the abdominal walls were distended and as tight as a drum. The patient did well, and there has been no return as yet. In such cases it would be well to starve the patient, perhaps, for some time before operating.

The Return of Extirpated Neoplasms.—At the late French Congress of Surgery this subject was discussed. Dr. Cazin of Berck-sur-Mer gave the results of his practice from September 1882 to 1886. He had extirpated 564 malignant tumors of all kinds; 102 scirrhus of breast, 60 with extension to glands of axilla, 42 without. In the first 60, 7 definite cures and 48 re-

turns, 3 died, and 2 results unknown. In the 42 others, he had 8 absolute cures, 28 returns, 2 deaths, and 5 result unknown. He had operated on 120 encephaloids, 80 with glandular enlargements, 40 without. In the first 80 he had 5 cures, 67 returns, 4 deaths, 4 results unknown. In 40 others, 8 definite cures, 26 returns, 1 death, 5 results unknown. The returns he had observed commenced from three months to seven years after operation. He attributes the proportion of his successes to his adhering strictly to the following precepts, viz., very extensive extirpation, without occupying himself with the immediate union of the wound. Even when the lymphatic glands appear normal, he extirpates the lymphatic vessels between the tumor and the lymphatic glands.

Prof. Verneuil of Paris said in the great majority of cases cancer is a constitutional disease ; the beginning may be a local trouble, which, once developed, will infest for ever the system and never is cured. He had seen in a lady a cancer return in a cicatrix of the breast thirty years after primary extirpation, with histological characters exactly similar to the first tumor ; another case recurred in the glands six and a half years after extirpation of epithelioma of the neck of the uterus. His opinion was that morbid latency explained the glandular return. He thought that the germs of cancer in an embryonic state could be destroyed and influenced by medicines which are powerless in the cancer itself. He always prescribes after an operation a permanent arsenical and alkaline treatment. He orders 1-25th of a grain of arsenic a day, and a teaspoonful of magnesia every night before going to bed. Under the influence of this treatment he had seen a lymphatic gland remain stationary for more than one year after amputation of the breast ; he absolutely condemned iodide of potassium. He advised also a vegetable diet, and thought that the French peasants have had a great increase of cancerous diseases since they have taken more meat with their meals.

Dr. Poncet of Lyons said that of seven primary epitheliomas of the scalp, all died after one or more operations. Two epitheliomas engrafted on old sebaceous cysts gave two cures ; eight

epitheliomas of the tongue, all died from a return of the trouble within two years. Again, he had two cures in epithelioma of the floor of the mouth. In one case of cure, both external carotids were tied and the lower jaw removed.

Dr. Boeckel of Strasburg, out of 103 operations for carcinoma, had 14 deaths and 89 recoveries ; 12 of these were permanent cures, 32 have been lost sight of, and 45 others had returns. One case of rectal cancer had no return for six years. Three cases (lip, rectum and tongue) did not return for eleven to twelve years.

Dr. Richelot of Paris reported 13 cases of vaginal hysterectomy, with 7 returns and 6 cures. However, two of the cases had only been operated on two months. It is in the first six months the return of the neoplasm is to be observed. It is rare to observe it after two years.

Remarks were also made by Drs. Labbé, Sabatier, Mollière, and others.

These results of operations for malignant disease are encouraging, and should tend to reassure surgeons that in such cases operative measures are not wholly in vain if undertaken early. In many cases of malignant disease, although the affection may not be cured, temporary relief is afforded in some cases for years. In sarcomata of the neck the results of operation are not brilliant, and I have been much disappointed, after the most extensive operations, to see an almost immediate return. In one case only (round-celled sarcoma) has there been no return after two years.

On the Excision and Scraping of Carbuncle.—Prof. Rushton Parker of Liverpool (*Brit. Med. Journal*, March 31st, 1888) cites some half a dozen cases of carbuncle in which he performed excision in the early stage. After excision he applies pure carbolic acid and then a sublimate dressing. In some cases further advanced he removes the necrotic tissue with spoon and scissors. The results in all cases were admirable.

Mr. Herbert Page (*Brit. Med. Jour.*, March 24th, '88) advises, in cases of carbuncle, to anæsthetize the patient, make a small central incision, and then with a Volkmann's spoon excise every particle of sloughing tissue ; such skin as seems dead and

blue should be cut away with scissors. After irrigating the wound with antiseptic solutions, iodoform is dusted in, and the whole covered with wood-wool pads and a pressure bandage applied.

Whilst in Germany last summer I visited Neuber's hospital in Kiel, and he showed me many cases of carbuncle which he had excised. He said that the duration of the affection by such treatment is about ten days. His method is to excise the carbuncle early, irrigate and if necessary scrape, then stuff with iodoform gauze; after five or six days he removes the tampon, pares the edge of the wound, and unites it by a continuous suture. He always gets union by first intention and thus avoids scarring. I have not seen a case early enough to put in practice this treatment, but I have scraped with Volkmann's spoon and removed with scissors the necrotic tissue in a couple of cases with good results.

Case of Cerebral Abscess in connection with Otitis Media successfully diagnosed and evacuated.—This case is reported by Dr. D. Ferrier (*Brit. Med. Journal*, March 10, '88). He says this is one of the few cases of cerebral abscess in connection with disease of the ear which have been accurately diagnosed during life and successfully treated by operation. The patient, a man aged 47, was first seen Nov. 25th, but had been ill since Nov. 10th. He had had an offensive discharge from the left ear for some ten days before. When seen he was drowsy, had pain over left side of head, with photophobia. On the 30th was more drowsy, and it was difficult to rouse him. Normal temperature and pulse. On Dec. 3rd he became delirious. On Dec. 6th his speech was affected; he used wrong words. When seen by Dr. Ferrier he was less drowsy, but incoherent. On examining the eyes signs of optic neuritis were evident. Weakness of right angle of mouth. On careful examination a spot, tender on percussion and pressure, was found two inches above and just anterior to a line drawn upwards from the external auditory meatus. The diagnosis of cerebral abscess was made, and the patient was operated on by Prof. Victor Horsley and the pus evacuated (five drachms). The patient rapidly recovered.

Dr. Ferrier says that he has been able to find only two cases of a similar nature, that of Gowers and Baker, and that of Greenfield (see *Retrospect* for June, 1887, pp. 71-74). Two others, referred to by Greenfield, Schondorff and Truckenbrod, he adds, but makes no mention of the case reported by Macewen (*Lancet*, March 26th, '87), Ogston's case (*British Medical Journal*, Dec. 2, 1886), and the two unsuccessful cases reported by McBride and Miller to the Medico-Chirurgical Society of Edinburgh in March last. These are all noticed in the *June Retrospect*.

Mr. Barker reports a case of cerebral suppuration (*British Med. Jour.*, April 14, 1888), due to otitis media, which was successfully treated by trephining and drainage; patient was aged 33. Patient had had a purulent discharge from the ear, pain on that side of the head, vomiting, epileptiform convulsions, transient coma and partial left hemiplegia. The paresis had started on left side of face, and had spread to left arm. Indications were that the lesion existed in and about the junction of the middle and lower third of the right ascending frontal and parietal convolutions. On trephining, an ounce of pus was evacuated.

Brain Surgery in Dublin.—At a meeting of the surgical section of the Royal Academy of Medicine, on Friday, Feb 24, 1888, three successful cases of trephining were reported, and the discussion on the papers was adjourned to a future night. These cases were all remarkable.

Professor Thornley Stoker read particulars of a case in which a man fell from a cart while drunk. He came to the Richmond Hospital some days later, rather stupid and with some lightly marked paralytic symptoms. It was not easy to determine whether he had not had an attack of apoplexy. The paralysis becoming more marked, Mr. Stoker trephined in the region of the fissure of Rolando—there was no fracture—and struck the margin of a blood-clot. He again trephined and more fully exposed the clot, which was washed out. The area so compressed was about three inches, and the clot measured nearly an inch in depth. The patient recovered and was exhibited.

Sir Wm. Stokes read a paper on a case of successful trephining for cerebral abscess, and exhibited his patient. The man had been struck with a poker on the left side of the medial line of the head, about an inch anterior to the coronal suture. He was treated as an out-patient at another hospital, but ultimately applied at the Richmond, when he was admitted, several weeks having elapsed from the date of the injury. He soon presented brain symptoms, became convulsed and comatose, and it was determined to trephine. A small fracture was found under the scar; the dura mater bulging into the wound. An exploring needle was introduced to the depth of an inch and a half, and pus was found. The dura mater was then incised, and one ounce and a half of pus evacuated. The patient completely recovered, and is now attending to his ordinary work. The paper noted eleven other cases of abscess which had been operated on by various surgeons, and discussed the questions involved.

The third case was brought forward by Dr. C. B. Ball of Sir Patrick Dun's Hospital, and the patient was also produced. The lad had been struck with a small knife over the squamous portion of the left temporal bone ten days before admission. The wound was healed, but he had some aphasia. Pain in the head and ear supervened, and the aphasia increased. It was determined to explore. He was trephined some weeks after the original injury; a wound was found in the dura mater corresponding to the puncture in the bone. A sinus forceps was passed in, the wound opened up, and some blood-clot escaped. The patient was decidedly better, but next morning he was again aphasic. The wound was washed out and more blood-clot escaped. The aphasia almost disappeared, but two days later returned, and the wound was again washed. After this the patient progressed favorably and is now well — (*Brit. Med. Jour.*, March 3rd, '88.)

In an editorial in the *Medical News* of April 21st, 1888, is a note of a case operated on by Dr. W. W. Keen. The patient, a young man aged 25, fell eighteen weeks before and had a depression two inches long on the right side of the head, over the supra-marginal and post-Rolandic convolutions. He had epileptic attacks and paralysis of left wrist and hand. The de-

pressed bone was removed, and the underlying dura mater and the diseased brain tissue below was freely excised. The wound united at the end of three days, and patient was up on the fifth day. In this case ergot was given instead of morphine prior to the operation, and cocaine was applied locally to the cerebral vessels with good results in controlling hemorrhage. The button of removed bone was replaced whole, and fixed to the under surface of the flap by catgut ligatures.

Compound Comminuted and Depressed Fracture of the Skull ; immediate trephining.—Mr. C. E. Bell relates a case of the above in a man aged 51, who complained of pain only, and was mentally quite clear. He trephined, removed loose fragments, and the man quickly recovered. Mr. Bell has followed out this treatment in four cases in the past fifteen months with the best results. All were operated on immediately after admission to hospital, without waiting for symptoms to develop, and all made excellent recoveries.—(*Lancet*, March 31st, '88.)

Additional Series of Eleven Cases of Cholecystotomy.—Mr. Lawson Tait (*Lancet*, April 14th, '88), in August, 1885, published thirty cases of operations on the gall-bladder with one death. All are yet living, with the exception of one who died of phthisis, and in none has there been a recurrence of the disease. To this list Mr. Tait adds eleven more, all of which recovered except one. The fatal result was due to the advanced age and extremely anæmic and exhausted condition of the patient. She was 61 years of age and never rallied from the operation, and died on the third day. At the post-mortem, the head of pancreas was found to be the starting-point of a carcinomatous growth which spread to the portal fissure ; the cystic duct was infiltrated with new growth. At the time of the operation, a large gall-stone and four ounces of pus were removed from the gall-bladder. In the ten other cases Mr. Tait encountered the usual difficulties, such as inflammatory adhesions and contraction of the gall-bladder. Some were suppurating. In solitary gall-stones the trouble seems always to tend to suppurative changes. This makes the gall-bladder friable, contracted, and adherent to the deep structures. Mr. Tait says when there is an absence

of cancerous complications, and the age of the patient is such as to give a fair chance, recovery from this operation is almost certain. In speaking of the advisability of removing the gall-bladder, he says : In cases where suppuration has made the gall-bladder contracted and firmly adherent to deep structures, its removal would be a terrible procedure, and in many cases could not be completed. The more experience he has in dealing with these cases the less necessity it seems to him arises for anything more than the simple process of cholecystotomy, and the extremely favorable results obtained from it put it in the first rank of modern operative proceedings.

Antiseptic Irrigation of Joints.—This operation, introduced by Schede (*Rinne. Centralblatt f. Chirurgie*, Dec. 8, 1877) some ten years ago, consists in aspirating the joint with trocar or needle, removing its contents, and then injecting it with antiseptic solution, which by rubbing, flexing and kneading is brought into contact with every part of the synovial membrane. The washing is continued until the fluid returns perfectly clear. A splint and dressings are then applied for a week, then passive motion for a week, when patient is discharged wearing a flannel bandage.

Hager (*Deut. Zeit. f. Chirurgie*, Bd. XXVII, Hft. 1 and 2) gives a large number of cases treated in this way in the General Hospital of Hamburg. In 100 cases of ordinary dropsy, all were cured with one exception, a tuberculous case. Only four required a repetition of the operation. In 15 cases of suppurative joints treated in this way, 7 recovered with good motion. There were 168 cases treated by irrigation and all recovered ; and in 30 cases of purulent effusion, in one only did the procedure fail, demonstrating the fact that irrigation should be resorted to before incision.—(*Abstract of Editorial, Med. News*, March 3rd, 1888.)

Successful Case of Laparotomy for Typhlitis with Perforation.—At the recent meeting of the American Medical Association, held in Cincinnati, Dr. McMurtry of Danville, Ky., exhibited a patient, a physician, on whom he had successfully operated for perforation of the cæcum. Patient was subject to attacks of

colic, for the relief of which morphine injections were used. After a time tenderness was complained of and a tumor discovered in the iliac region. This was followed by hemorrhage from the bowel, vomiting, and tympanites. Operation was performed. Appendix found normal, but cæcum gangrenous in spots and perforations existed through which fæces had been extravasated. The edges of the perforations were trimmed and closed by suture. Patient recovered completely.

Surgery of Enlarged Prostate.—Dr. W. T. Belfield (*New York Medical Record*, March 10th, 1888) thinks that in cases of protracted cystitis from prostatic enlargement we should no longer withhold operative relief, and that after other methods have failed suprapubic operation of the bladder should be made. In a certain percentage of cases the obstacle to urination will be found as a projecting prostatic growth which can be removed with scissors or the cautery. In cases where this cannot be done, a permanent opening may be maintained and a tube fitted in; this enables patient to dispense with the painful use of the catheter. In some cases Apostoli's method of using an intense galvanic current has proved useful. Illustrative cases are given.

The method introduced by Harrison of Liverpool in cases of difficult catheterization appears to be more scientific, viz., incision through the prostate and drainage through the perineum.

Intestinal Obstruction treated by Laparotomy.—Dr. Wm. T. Bull (*New York Medical Record*, Feb. 25th, '88) reports five cases of intestinal obstruction treated by operation, with three recoveries and two deaths. The deaths were in (1) a case of intestinal obstruction by peritoneal band, with peritonitis, operation on eleventh day; (2) obstruction for cancer of the rectum. The recoveries: (1) Acute obstruction caused by peritoneal band; operation on sixth day. (2) Acute obstruction in cancer of the sigmoid flexure; laparotomy and artificial anus on the seventh day. (3) Chronic intestinal obstruction from cancer of sigmoid flexure; laparotomy and artificial anus. Dr. Bull strongly urges operative interference in cases of acute intestinal obstruction if medical measures fail to relieve at the end of 24 or 48 hours. He does not advise removal of the intestines from the abdomen in searching for point of obstruction.

Resection of the Left Lobe of the Liver.—Dr. Langenbuch (*Berlin Klin. Woch.*, No. 3, 1888) records a case in which he successfully resected the greater part of the left lobe of the liver. This had been extensively deformed by tight-lacing, and had caused great inconvenience and trouble to the patient. The patient, a woman, was aged 30. She complained of abdominal tumor, and on examination this was found to be about the size of the fist, and situated in the epigastrium. The diagnosis lay between deformity from tight-lacing and hydatid tumor. An exploratory incision proved it to be due to tight-lacing. Dr. Langenbuch decided to remove this part of the liver, which was separated from the rest by a broad pedicle. The pedicle was transfixed with ligatures and the lobe excised. Symptoms of severe internal hemorrhage appeared the first night, and on re-opening the wound the cavity of the abdomen was found filled with blood. This was sponged out and the vessels secured, and no further trouble arose. The wound healed, but recovery was retarded by the occurrence of ascites, which necessitated tapping. The portion of liver removed weighed about twelve ounces. The patient finally completely recovered.—(*Lancet*, Feb. 4th, 1888.)

Cystitis.—Prof. Guyon of Paris, in some clinical lectures on the above subject, says (*Annal des. Mal. des Org. Gén.-Urin.*, Feb. 1887), when speaking of *Gonorrhœal Cystitis*, that after a gonorrhœa, as soon as the prostatic portion is reached, then cure is difficult. The affection may last years. Gonorrhœal cystitis localizes itself mostly in the neck of the bladder, and in the most severe cases causes the development of granulations. For treatment, he recommends the introduction into the empty bladder of 20 to 50 drops of a one to two per cent. solution of nitrate of silver.

Tubercular Cystitis.—This affection rarely occurs in cases of lung tuberculosis; often tubercle first appears in the bladder or in the neighboring joints and bones. A gonorrhœa frequently precedes a tuberculosis of the bladder. Guyon does not believe with Cohnheim that it can be contracted by sexual intercourse, especially for the reason that the anterior part of the urethra

is never the subject of a tuberculous process. This form of cystitis localizes itself in the neck of the bladder and the trigone. It frequently commences insidiously, without any cause, by symptoms of strangury, incontinence, and bloody urine. This symptom may last days and weeks, and is analogous to hæmoptysis. In other cases there is, in the first place, severe pain. Tuberculous cystitis can be temporarily relieved, and may last 15 to 20 years, without any lung complication. The best way to diagnose the disease is to search for the tubercle bacillus. The treatment is not very satisfactory. Avoid catheterization, and in the most severe cases perform cystotomy either in the perineum or suprapubic region.

Treatment of Carotid Hemorrhage.—At a meeting of the Medical Society of London, held on January 9th, Mr. Frederick Treves read a communication on the above subject. (*Lancet*, Jan. 14th, 1888.) He had long been convinced that ligature of the common carotid for hemorrhage from a small distant branch was a severe and often unnecessary method of treatment. In the limbs, bleeding from a small vessel could usually be controlled and arrested by temporary compression applied to the main trunk either with the finger, by flexion, or other means; but in the neck, temporary pressure by these methods could not usually be applied with success. He had therefore devised the plan of exposing the artery and passing a thread of catgut around it; if the loop thus formed were pulled up, pulsation in the artery stopped; if it were relaxed, the circulation went on again. He referred to four instances in which this manoeuvre had been carried out successfully. The great recommendation of the method was that there were no grave risks from the operation itself, and there was no local inflammation in any of the four cases.

Sequel to a Case of Ligature of the Carotid.—At the meeting of the Clinical Society of London, held Feb. 24th, 1888, Mr. Holmes read some notes which formed the sequel to an old case of ligature of the carotid artery which was published in the ninth and tenth volumes of the Society's Transactions as one of distal ligature of the left carotid for aortic aneurysm. The

patient survived the operation for twelve years and then died of phthisis. The post-mortem examination proved that the thrill, bruit and pulsation which were thought to be caused by aneurysm of the aorta depended on stenosis of the valves of the pulmonary artery with dilatation of its left branch. There had been weakness and occasionally total absence of pulse in the left arm, but the cause of this was not explained by the post-mortem examination, which had been somewhat hurriedly made. The aorta and its branches were healthy as far as they were examined. The left carotid was obliterated throughout its whole extent. As the case had been used in discussing the propriety of distal ligation in aortic aneurysms, it was thought right to publish this correction.—(*Lancet*, March 3rd, '88.)

Bleeding after Tonsillotomy.—Prof. D. ZuckerKandl discusses this subject (*Wiener Med. Jahrbücher*, 1887, Hft. 6), and says that in addition to the pharynx wall and fatty tissue there lies a protective muscular layer formed by the stylo-glossus and stylo-pharyngeus between the tonsil and the carotid, and that wounding of the latter in tonsillotomy and the opening of tonsillar abscesses is unlikely if the knife be properly directed. Wounding of the internal carotid is possible in opening retro-pharyngeal abscesses, because there it is forced out of place by the pus. Severe bleeding, however, does occur in operations on the tonsil. This hemorrhage may prove fatal in cases of hemophilia. Sometimes, on account of the retraction of the bleeding vessel through the fibrous capsule of the tonsil, hemorrhage is difficult to arrest, and if not arrested may prove fatal. Pressure or the use of artery forceps generally arrests it, but if everything fails then ligation of the external carotid always will arrest it.

The artery that bleeds is the tonsillar, which may be given off variously. It is most commonly given off from the ascending palatine branch of the facial, more seldom from the facial directly or from the external carotid, and sometimes from the ascending pharyngeal.

Fatal Tonsillar Hemorrhage.—Dr. J. N. Hall reports a case which occurred in a man aged 26, who had suffered from re-

peated hemorrhage from the mouth as a consequence of acute tonsillitis. Styptics and pressure served to control bleeding. Eleven days later hemorrhage recurred with fatal result in a few minutes. It was supposed to be due to ulceration of a large vessel.—(*Boston Med. and Surg. Times*, Dec. 22, 1887.)

Transplantation of Nerve from Rabbit to Man.—Dr. Gersung of Vienna, assistant to Prof. Billroth, has recently performed a novel and interesting operation (*Brit. Med. Journal*, May 19, 1888), viz., the transplantation of nerve from the rabbit to man. The patient was Prof. von Fleischl, who occupies the chair of Physiology in the Vienna University. Sixteen years ago he accidentally wounded himself while performing a post-mortem examination, and severe inflammation of the whole right upper limb ensued. The terminal phalanx of the thumb became gangrenous, the stump left became painful, and later on reamputation was performed. This was followed by the formation of neuromata. For this condition the branches of the median nerve which supply the thumb were first resected, together with the terminal neuromata, and at a later period, when new neuromata began to develop, the central parts of the same nerves, together with the branches of the radial nerve which supply the thumb, were resected. Fresh neuromata now developed on the branches of the median nerve, which were treated without success by the injection of hyperosmic acid and electrolysis. Two years ago the neuromata were resected again, and the resection of the nerves was continued. The pain, however, recurred, and the suffering became so intense that the following operation was performed: On March 4th patient was put under the influence of chloroform, and the neuroma, which was situated behind the volar carpal ligament, was excised, the nerve being cut through behind the neuroma. The peripheral nerve stumps of the two digital branches were then sought for. A rabbit was now killed, and as long a piece as possible of the sciatic nerve of the animal with the two branches into which it divides was dissected from it. The sciatic nerve was afterwards inserted into the space between the central stump of the median nerve and its digital branches; the central end of the sciatic nerve was sutured to

the connective issue which covered the median nerve, and the two branches were sutured to the digital branches of the median nerve. The portion of nerve measuring about six centimetres which was deficient was thus made up. After the operation, severe pain persisted for some hours, but then entirely subsided. Healing took place by first intention. At the time of writing two months had elapsed since the operation and the pain had not returned ; sensibility was being re-established in the part. The ultimate result of this operation will be anxiously awaited, as the result, if favorable, will have much influence in introducing and giving a widely extended trial to an operation which promises to relieve a very painful affection.

Acro-megaly.—At a meeting of the Clinical Society of London, held April 13th, Mr. Rickman Godlee reported a case of the above affection. This affection was first noticed by Marie (*Revue de Médecine*, April, 1886), although Dr. Hadden and Mr. Ballance had previously published a case in Vol. XVIII of the Society's Transactions, 1885. The disease is named from the enlargement of the hands and feet, but the bones of the face also become hypertrophied. The long bones are usually unattacked. Mr. Godlee's patient was a lady, aged 41, who had applied to him on account of a great enlargement of the thyroid of about nine years' duration. The cyst was opened and drained. The patient, who had previously been of a slight figure and the possessor of a good voice, first noticed the disappearance of her high notes, then the swelling of the neck, and then the sudden stoppage of her menses at the age of thirty-six. Since that time there had occurred a gradual increase of the thyroid, accompanied by enlargement of the bones of the face and limbs, and especially of the lower jaw and hands and feet. Her present condition was as follows : Bones—Lower jaw much enlarged, so that the teeth, which spread out, could not adapt themselves to those of the upper jaw ; the face has the shape of an egg with large end downwards ; clavicle and ends of ribs massive, and sternum appears as if sunk down between them. All natural prominences of long bones much exaggerated, and the small bones of the hands and feet much enlarged, so that

the extremities had become broad and spade-like. Marked kyphosis of spine, causing considerable diminution in height. Cartilages of ears thick and stiff. Skin coarse, with large sebaceous glands in face. Muscles much wasted. Smell much impaired, but hearing normal. Vision good, and touch normal. Voice harsh, metallic and monotonous. In a condition of marked and increasing weakness, poor appetite, and excessive thirst. Pulse rapid; temperature normal. Intelligence perfect, and disposition placid. Mr. Godlee referred to (1) the connection between this remarkable condition of the bones and the abnormal thyroid noted in most cases, comparing it with cases of serous malignant tumors of the thyroid, which have a tendency to recur in bones; (2) the relation between the abnormal thyroid and the early stoppage of the catamenia, also apparently a common symptom of the disease; (3) the resemblances and differences between acromegaly and osteitis deformans; (4) the superficial resemblance, but wide difference, between acromegaly and myxœdema.

At the same meeting Dr. Hadden and Mr. Ballance brought forward a case which had been reported three years before; the case was now of five years duration, and was that of a woman aged 37. It followed a rheumatic swelling of the knees following scarlet fever. Her menses ceased and never returned; the face enlarged, also clavicle, hands and feet. The enlargement was general. The cranium was not affected, and the thyroid was distinctly atrophied. The tongue was hypertrophied. Attention was called to the chief points of difference between this disease, myxœdema, and osteitis deformans.

Dr. Wilks also reported a case of the disease in a young woman aged 28. She had been good-looking, but had become so hideous that the boys shouted after her on the streets; her features had become thickened and deformed, and her hands and feet large and ungainly. The malady had lasted six years and there was amenorrhœa. She had lost the sight of both eyes. She finally died comatose, and his belief was that there was a tumor of the brain.

Dr. Godlee stated that in three cases of this disease there

was found post-mortem some enlargement of the pituitary body. Erb's paper collected eleven cases of the disease, and with the two now reported, brought the number up to thirteen occurring between the ages of 15 and 50. It occurs in both sexes. The first case reported occurred in a woman aged 58; the disease came on at the menopause. In some cases the lower jaw was not enlarged, and in others the long bones were distinctly enlarged.

The Influence of Antisepsis on the Kidneys.—At a recent meeting of the Berliner Medicinische Gesellschaft, Dr. Emil Senger read a paper on the above subject. He said that it is well known that after nephrectomy, or even nephrotomy, many patients die with symptoms of uræmia or anæmia, even when it has been ascertained beforehand by careful examination that the other kidney was quite healthy and capable of secreting the necessary amount of urea. Senger has proved by experiments on rabbits and dogs that our antiseptic remedies are the cause of these complications. He injected into the animals when in perfect health one-tenth to one-twelfth the amount of corrosive sublimate and carbolic acid necessary to kill them. He then extirpated one kidney and examined it microscopically, with the result that in all cases he found glomerulo-nephritis. There was exudation between the glomerulus and the capsule, and the epithelium of the tubuli contorti was almost entirely destroyed. He also found fatty degeneration of the liver and spleen, the heart-muscle, etc. The various antiseptic agents were found to be injurious in different degrees, corrosive sublimate being the most dangerous, then the others in the following order—iodoform, carbolic acid, salicylic acid, boric acid. Senger recommends surgeons to avoid antiseptics in operation on the thorax and abdomen, and urges them either to employ sterilized water or a solution of salt. By bacteriological and pathological researches he found, first, that this kills the streptococcus pyogenes aureus in twenty-eight minutes, and that the effect is independent of the degree of concentration, for a five per cent. solution of salt is just as effectual as a twenty per cent. Secondly, he claims to have shown that chloride of sodium does not in any way injure the organs, and that no dose is strong enough to kill any animal.—(*Brit. Med. Journal*, May 19, 1888.)

Treatment of Enlarged Prostate.—Mr. Reginald Harrison of Liverpool, in a recent lecture (*Lancet*, July 21, 1888) on the *Pathology and Treatment of Enlarged Prostate*, says :—
 “As to the treatment of prostatic hypertrophy when the part has to a large extent assumed the structure and properties of a fibroma, I would like to say a few words in conclusion. The degree of vesical irritation and obstruction under these circumstances is sometimes very intense, and various means have been proposed to deal with this condition by operative procedures having for their object either the section of the obstructing part with provision for more perfect drainage of the bladder by artificial means, or removal of more or less of the prostatic mass. In both of these directions considerable relief has been afforded. Having regard to the fibroid condition the part assumes, I have thought, if there is any truth in Apostoli’s treatment, that it is possible it might, under these circumstances, prove serviceable. I have now this subject under consideration. I am aware that electrolysis has been practiced both in this country and in America, but I cannot say that as yet we have sufficient evidence to warrant its more general adoption. I would lay stress on the examination of the prostate from the rectum as determining our views in reference to the patient’s future when retention of urine is due to this cause. When this happens in a person with a hard, nodulated prostate, where there is evidence to the touch that fibrous tissue predominates largely over the muscular, the power of the bladder seldom returns and the use of the catheter is generally perpetual ; but when, on the other hand, the prostate is found soft and yielding to the touch, indicating that muscle still prevails, we may, as a rule, anticipate complete restoration of function.

Tumors of Bladder Diagnosed by the Electro-Endoscopic Cystoscope.—Dr. Max Nitze (*Lancet*, April 21, 1888) reports fifteen cases of tumor of the bladder diagnosed by this instrument during the last sixteen months. In eight cases the tumor was extirpated, seven by high section, and in the one case, a woman, through a dilated urethra. The article is accompanied by diagrams of the instrument which he invented, and to which

the name of Leiter has been attached without authorization by him. Leiter, in order to make the instrument, had first to buy the patent from Dr. Nitze.

Trephining for Meningeal Hemorrhage.—Cases of meningeal hemorrhage due to injury from blows or falls are not uncommon, and many cases could be saved if recognized early enough and operated on. At the meeting of the Medical Society of London held March 26th, Mr. Davis Colley showed a carman, aged 53, who, on October 21st, 1887, when driving a van, fell down a distance of twelve feet, striking the side of his head. He was insensible at the time, but recovered consciousness. He then had slight paralysis of the left arm and bruising of the right temporal region. There was no indication of fracture. An hour afterwards he had complete paralysis of the left arm and slight loss of power in the left leg and side of the head. Next day there was noticed a little numbness on the left side. He continued in much the same condition for ten days, passing his evacuations involuntarily; was very drowsy, with a slow, weak pulse, temperature below 97°F., and slight delirium. On the eleventh day Mr. Colley trephined immediately in front of the middle of the right fissure of Rolando, using a semi-circular flap. He came down on the centre of a large clot, which he removed partly with his finger and partly by irrigation with bichloride of mercury. There was no suppuration and the patient recovered rapidly. On the seventh day he was worse again; this was found to be due to pressure of the dressing. He could now move his arms well and grasp firmly. Mr. Colley remarked that cases of successful trephining in hemorrhage between the skull and dura mater were very rare. Mr. Jacobson had succeeded in finding only ten cases recorded during the last one hundred years.

Excision of the Tongue.—Mr. Walter Whitehead (*Lancet*, Jan. 28th, '88), in a paper on the above subject, states that he has now performed entire excision of the tongue by scissors in ninety-one consecutive cases. He has had a series of twenty-one cases without a death, but he does not give the total mortality in his ninety-one cases. Mr. Whitehead's method of excision

has already been before the profession for more than ten years, and has been, in fact, almost universally adopted by surgeons. In the present paper he contrasts this operation with removal of the tongue by the *écraseur* much to the detriment of the latter method. He holds that partial extirpation of the tongue is a wrong procedure, and advocates total extirpation in every case. He says that the patient can eat and speak better when the whole tongue is taken away than when a portion only has been removed, and that as no surgeon can define the ultimate limits of the disease when dealing with a cancerous growth, it is better to err on the right side and remove plenty. If the lymphatic glands are affected as well as the tongue, they may be removed at the same time as the tongue, or, what he considers a still better procedure, at a later period, as soon as the patient has recovered from the first operation. In removing the tongue through the wound he uses Mason's gag. In not one of his ninety-one cases has he been troubled with hemorrhage. The arteries are easily secured either before or after cutting them. He uses torsion entirely, and has abandoned ligatures. Since he has adopted torsion he has never had a case of secondary hemorrhage. After operation he made use of an antiseptic varnish to cover the wound, after having washed the wound thoroughly with perchloride of mercury solution. The varnish used consists of the ordinary constituents of Friar's balsam (Tinct. Benz. Co.), substituting a saturated solution of iodoform in ether for the rectified spirit. This dries immediately and leaves a firm coating on the wound which lasts for twenty-four hours. He prefers this to the sticky gauze of Billroth. When the varnish is used the patient can take food by the mouth the day after operation. After removal of the tongue Mr. Whitehead never encourages the patients to consider themselves invalids, in fact the less they adopt the recumbent position the better. Open air exercise (weather permitting) should be taken on the second day after operation, as it helps to promote rapid convalescence. Many of his cases of excision are alive after two, three, four and five years; one old lady whose tongue he removed in 1872 died from other causes in 1886. He looks

upon statistics in excision of the tongue as fallacious, and says if he were to select his cases he would be surprised if he ever had an unfavorable termination. He is in the habit of removing tongues far advanced with malignant disease merely for the sake of relieving the pain and removing from the mouth a source of intolerable disgust. In these cases and those where the glands are involved the death-rate is necessarily high.

Mr. Whitehead must see many of his cases at a very early stage of the disease. It has never been my lot to operate on a case of cancer of the tongue where the lymphatic glands were not involved. It is not every patient that will consent to a second operation for the removal of the glands. I have always removed the whole tongue by scissors after the method of Mr. Whitehead, but have also previously tied the linguals in the neck in all cases. I have also for some time employed with good results the mixture used to impregnate Billroth's sticky gauze as a paint, for I have not found the gauze to remain any time in the mouth. This paint of iodoform resin and spirit, with a little castor oil added, makes a capital protective antiseptic varnish. The early convalescence of Mr. Whitehead's patients is worth noting, and speaks well for his method; his advice to get them out of bed on the second day is quite a new departure in the treatment of excision of the tongue.

On the use of Rectal Insufflation of Hydrogen Gas to detect injuries of the Gastro-intestinal Canal in penetrating wounds of the Abdomen.—Prof. Senn of Milwaukee, at the last meeting of the American Medical Association (*Med. News*, May 15, '88), read a paper on the above subject and showed by experiments on animals how readily this method of diagnosis could be put in practice, and with what certainty wounds of the intestines could be detected by its use. Dr. Wm. Mackie (*Medical News*, June 9th, 1888) reports a case of *Gunshot Wound of the Intestine*, where the site of the injury was located by means of hydrogen gas. The patient was a colored man, aged 27, who had been shot in the abdomen with a 38 calibre pistol a little to the left of the linea alba and a little below the costal arch. The patient was etherized and rectal insufflation effected in the following

manner : A five-gallon rubber bag filled with hydrogen gas was connected by rubber tubing with a long glass tube of an extemporized chemical wash bottle half filled with water. To the short glass tube passing through the cork only was attached, by rubber tubing, the rectal nozzle of an enema syringe. This bottle was introduced so that the rapidity of the inflation could be judged of by the bubbling of gas through the water. When the rectal nozzle had been introduced, slow, steady and continuous pressure was made on the rubber bag. Under very slight pressure the gas commenced to bubble through the water. As inflation progressed the abdomen, previously flat on percussion from the umbilicus to the pubes, became resonant and the area of liver dullness diminished from below upwards. The inflation was continued until the abdomen became uniformly distended and tympanitic throughout. Still no gas escaped through the wound of entrance until the abdomen was firmly compressed, when there was an intermittent escape of gas and blood through the wound. The gas, however, could not be lighted by the matches used ; but the escape of gas proved that the intestines had been injured and immediate laparotomy was performed. All the intestines were found distended with gas except the stomach and duodenum, and in each of these two wounds were found. These were closed, but the patient died thirty-six hours after of septic peritonitis.

In the *Medical News* of same date Dr. Wm. J. Taylor reports a case where hydrogen gas was used to determine the site of a fæcal fistula, whether it was in the large or small intestine. In order to determine the question Dr. Keen inflated the bowel with the gas in the way advised, and in less than half a minute, and before any gurgling was heard in the ileocæcal valve, gas was seen to bubble out of the fæcal opening, and on bringing a lighted candle near it the gas took fire. A small exploratory opening was then made in the abdomen and the fæcal fistula was found to arise from a carcinoma of the large bowel. The disease, however, had progressed far beyond operative relief, and the operation was not proceeded with.

Considerations on the Pathology of the Cæcum and Appendix.—Dr. Joseph Ransohoff of Cincinnati, in a paper on this

subject (*Med. News*, June 2, '88), says there are most excellent reasons for dividing inflammations in the right inguinal region into those of the cæcum, and those of the appendix, and each, again, should be divided into those of the part itself and those of its peritoneal investment. Thus the affections would be typhlitis and perityphlitis, appendicitis and periappendicitis. The inflammations of the appendix are of much more frequent occurrence than those of the cæcum proper. Perforations which occur in the cæcum are not often produced by foreign bodies; they are not infrequently produced by tuberculosis. In 25 cases of perforation in this region collected by the author only one was of the cæcum. Kraussold claimed that between the ages of 20 and 70 every third body will show traces of disease of the appendix, and that in tuberculous subjects it is often converted into a tubercular ulcer. In 60 examinations made by the author, in only 8 cases were there either abnormal adhesions, unusually hard fœcal masses, or cicatrices on the surface. This discrepancy may be due to the difference in food, where much vegetable food is taken, as in Siberia there is greater frequency of diseases in this region.

The history of appendicitis is like that of inflammation in any other narrow mucous canal with their catarrhal, ulcerative and cicatricial stages. Perforation is due in three-fifths of the cases to foreign bodies. In other cases the appendix degenerates into a retention cyst. In a fair proportion of cases (7 out of 25) no foreign body or fœcal mass can be found, nor can rupture of a cyst or tubercular ulceration account for the perforative peritonitis. In such cases the distal inch or two of the appendix is found gangrenous. This condition, Dr. Ransohoff thinks, is brought about by the displacement of the appendix and consequent torsion of its vessels. The exciting cause of perforative appendicitis is, in one-fifth of the cases, a violence from blows, excessive exercise, lifting, or vomiting. In cases of perforation where the contents of the appendix are thrown into the general peritoneal cavity, death ensues rapidly and before adhesions form. In many cases, however, gradual drainage prepares the way for limitation of the resulting abscess. The abscess from it may come to the sur-

face above or below Poupart's ligament, towards the hypogastrium, loin, or it may open into some hollow viscus, as cæcum, rectum, vagina, etc. Dr. Ransohoff appends the following aphorism to his paper: "Place not your faith in exploratory punctures; operate early and by lateral laparotomy where the symptoms are of the gravest and a tumor is not forthcoming; reserving the incision parallel to Poupart's ligament for abscesses that are palpable."

Laparotomy or Enterostomy.—Dr. Roswell Park of Buffalo (*N. Y. Medical Record*, March 3rd, 1888) gives a *resumé* of the recent literature on the treatment of obscure cases of acute intestinal obstruction; his conclusions are as follows: When a case of acute obstruction is seen *very* early, an exploratory laparotomy may be justified. When a case is seen very late, enterostomy is probably the only justifiable operation.

Laparotomy is especially indicated when the nature of the obstruction is recognized or made reasonably evident; when a small tumor indicating intussusception is made out; when the obstruction is caused by neoplasms which can be removed; when the condition of the peritoneal cavity demands washing out or drainage.

Enterostomy is especially indicated when no idea can be formed of the nature of the obstruction; when the malignant element includes hope of permanent benefit; when the abdomen is particularly tympanitic; when the patient's power has been undermined by the severity of the disease.

Laparotomy is the more radical and surgical measure, but somewhat the more dangerous.

Enterostomy is safer and quicker, causing little or no shock, but entailing certain very disagreeable sequelæ, suitable for all desperate and some favorable cases. Abdominal section should never be done in *extremis*; enterostomy may be.

Results of Laparotomy for Acute Intestinal Obstruction.—Dr. B. Farquhar Curtis, in a paper on this subject (*Annals of Surgery*, May, 1888) gives a series of tables showing the results of operations in cases of acute intestinal obstruction. He has collected 328 cases, with a mortality of 226 (68.9 per cent.)

In 101 cases the failure of the operation was due to the condition of the patient. In 28 cases the cause of obstruction was not found or could not be removed. In 17 cases sepsis, probably due to the operation, was the cause of death.

The reader is referred to this article for further information, and also to an editorial on the same subject in the same number of the *Annals*.

In the *Annals of Surgery* for August, 1888, is an interesting paper by Dr. H. E. Dalton of St. Louis on *Gunshot Wounds of Stomach and Liver treated by Laparotomy and suture of Visceral Wounds with Recovery*. Appended to the paper is a table of all the published cases of laparotomy for gunshot wounds—in all 69 cases, with 27 recoveries. In no case has Dr. Dalton been able to discover that the liver has been successfully sutured, and he thinks he is justified in claiming priority in the matter. In the *Brit. Med. Journal* for June 16, 1888, is an abstract from the *Riforma Medica* of a case of wound of the liver in a man aged 28 from knife stab, by Prof. Postempski. The wound was sutured with six chromised gut sutures, and the man made a good recovery.

Wounds of the Abdomen.—In the August number of the *Annals of Surgery* are reports of number of cases compiled from Russian sources of wonderful recoveries from stab wounds of the abdomen, with lesions and protrusions of the bowel. In one case, where the surgeon saw the patient twenty-four hours after the injury, which was caused by a staff armed with a pointed iron, he found a woman, aged 53, in a small hut, full of people, lying on a large wooden bench. She was pale and complained of agonizing pain; her belly was wrapped in a mass of dirty rags. The latter being removed, a loop of bowel was found strangulated in a clean cut wound situated $2\frac{1}{2}$ c.m. below the umbilicus. It was returned and the wound sewed up. The woman made a good recovery. Another case of stab wound of the abdomen, the patient a lad aged 17, was found in a loft crowded with laborers, and the abdomen was covered with dirty rags, on removing which the abdomen was seen to be covered with highly distended and congested intestinal loops,

amidst which omentum was visible here and there ; a round worm and soft fecal matter present among the loops showed that the weapon had penetrated the bowel. The abdominal wound measured $1\frac{1}{2}$ inches in length. With great difficulty the man was placed under chloroform, for the struggles of the patient caused more bowel to protrude, besides there was not a single assistant and the room was small, hot, and sultry, as only Russian rooms can be in January. The bowel was finally returned, and the patient was quite well on the thirty-fourth day. Dr. Bekleinsheff observes that "the practitioner of this kind only too often finds himself in conditions in which one can venture to render medical aid only after summoning one's whole strength and courage. One single assistant is pure country air ; to its agency the fact should be attributed that the rustic dirt does not give rise to such harmful consequences as are daily observed in towns in absence of ideal cleanliness."

Elements of Success in the Operation for Cleft Palate.—Mr. Howard Marsh, in a paper in the *Lancet* of July 7th, 1888, draws attention to several important and essential points in the treatment of cleft palate by operation. He states that the mistake sometimes made is that of operating too early. It is possible to cure the slighter forms of cleft of the soft palate in children who are only a few months old, but even in the most favorable cases failure will be more frequent than success. It is better to postpone the operation until the child is two or three years old, or older still, unless he is well grown and strong. When the hard palate is involved the operation had better be postponed till the child is three and a half, and in the average run of cases it is better not to operate till the patient is four or five. Of course the earlier the operation the better the articulation, but if the success of closure of the palate was the only point to be considered, the best age would be between nine and twelve. Care must be taken to see that the child is in good health before operation is undertaken. The temperature should be taken morning and evening for three days before operation. Care must also be taken to ascertain that the child has not been

exposed to any of the exanthemata, especially scarlet fever. Should the patient have a cough or diarrhoea, the operation should be postponed. Again, the width and shape of the fissure is most important, also the conformation of the long arch of the palate. The mere antero-posterior extent of the cleft is immaterial; the really important points are the width of the fissure, the shape of its anterior end, and the height or pitch of the arch of the hard palate; the wider the cleft the more difficult it will be to close it. When the anterior end of the cleft is pointed like a thin wedge, the shape is favorable; but when the anterior end is rounded like the bow of a hair-pin, even though the cleft behind is not very wide, the difficulty of closure will be considerably increased. As to the arch, the higher the arch, the width remaining the same, the easier will the closure be.

In performing the operation, several points have considerable effect on the result. When the edges of the cleft have been pared, the soft parts on either side should be freely separated, not only from their general connections with the bones which they cover, but especially from their line of attachment to the posterior border of the horizontal plate of the palate bone. Separation should be effected by the free, though careful, use of blunt-pointed curved scissors, employed first to divide the structures along this line, and then the blades being closed, as an elevator, to complete the separation further forward. The palate will now hang in a flaccid state in its whole length, and its edges will admit of easy approximation. When the cleft is extensive the soft parts should be detached from the bones, not only along the borders of the cleft, but outwards and upwards nearly to the teeth. Another point is the relief of tension on the line of sutures by making lateral incisions. The incisions should run from before backwards and a little outwards, midway between the sutures and the alveolar process. The whole thickness should be divided only at the anterior half of the incision. The sutures should be of silver for the hard palate and of horse-hair for the soft. The first silver suture should be placed at the junction of the hard with the soft palate, then the soft palate should be closed to the tip of the uvula, and, lastly, the hard from behind forwards.

For four or five days after operation the child should be fed exclusively on milk and beef tea, with a little brandy added to the milk if necessary. From the sixth to the fourteenth day he may have bread-crumbs soaked in gravy, bread sauce made with milk, or finely browned potato in gravy. No solid food should be given until the palate has healed and the sutures have been removed. The palate should not be looked at for the first week, as opening the mouth does harm. The sutures should not be removed until the tenth day.

Mr. Marsh's directions are well worthy of attention ; there is no greater disappointment to the surgeon than a failure in the operation for cleft palate. Not unfrequently the operator fails on account of the supervention of scarlet fever or other exanthem. With regard to the sutures, silk-worm gut is more easily managed than horse-hair, and silk than wire. The silk-worm gut may be left in indefinitely without causing any irritation.

A New Method for the Treatment of Indolent Ulcers.—Dr. F. Spaeth (*Centralblatt f. Chirurgie*, No. 14, 1888) says that the reason failure is so frequent in the treatment of indolent ulcers is because of the deficient nourishment of the surrounding tissues ; for this reason many methods, such as Thiersch's, though temporarily successful, often fail. To bring about a better condition of the ulcer and its surroundings is his object. His method is as follows : The whole ulcer is divided from one end to the other by incisions which reach into the healthy tissue beyond, and transverse incisions are made in the same way, through the callous boundary of the ulcer into the healthy tissue. These incisions should be about two centimeters distant from one another. The incisions should extend not only through the skin, but into the subcutaneous fascia. The bleeding can be controlled by pressure, and the parts should be dressed with a firmly and evenly applied iodoform gauze bandage. This should be left on for from eight to fourteen days, when it is removed. The ulcer will be found to be granulating in a healthy manner, and now, if necessary, may be closed by the transplantation of skin. The results Dr. Spaeth has found excellent ; the resulting scar is soft and well-nourished, and there is no tendency of the ulcer to relapse.

Primary Operations for Breast Cancer in von Bergmann's Klinik from the Autumn of 1882 to May 1887.—J. Rotter (*Müncher Med. Woch.*, 1887, No. 49) gives an account of 114 primary operations in which the breast, neighboring fat, pectoral fascia, portions of the pectoral muscle, and the axillary glands were removed. In only two cases were indurated glands not found in the axilla. Three times was the axillary vein tied and once the vein and artery. Once the pleural cavity was opened, but the patient made a good recovery. In five cases death shortly followed the operation—one each from hemorrhage of the stomach, lung embolism, brain embolism, collapse (after amputation of both breasts), and sepsis. In 30 cases the disease recurred in the breast wound. In 6 the disease returned in the opposite breast. In one case only was the axilla alone engaged. Twelve patients had recurrence of the disease in internal organs without local or regional recurrences. In 18 cases the cause of death was not ascertained. Thirty-four cases remained free from a recurrence of the disease up to date; 5, one to six months; 7, six to twelve months; 4, one to two years; 5, two to three years; 8, three to four years; and 5, from four to four and a half years, so that 13 may be regarded as definitely cured. These 13 recovered out of 43 operations from the autumn of 1882 to end of May 1884.

Excision of a Dislocated Spleen and subsequent Expectoration of the ligature of the pedicle.—Dr. T. H. McGraw of Detroit reports (*N. Y. Med. Record*, June 30, 1888) a successful case of extirpation of the spleen in a woman aged 40, and in the same paper mentions another case in a man aged 27, where death ensued $2\frac{1}{2}$ hours after operation from hemorrhage.

Treatment of Empyema.—In an address on the surgical treatment of empyema (*Brit. Med. Journal*, Oct. 13th, 1888) Mr. Howard Marsh advocates early incision and drainage. The aspirator may in rare cases be successful, but its value is doubtful. He advises incision in the eighth or ninth intercostal space, immediately external to the inferior angle of the scapula. Chloroform should be given, and whilst administering it the patient should lie on the affected side, and over the side of the table, so that the action of the sound lung may not be impeded. The opening is best effected by making an incision through the skin and muscles of the intercostal space and then thrusting a director into the pleural cavity and stretching the track thus secured by dressing forceps. In adults, where the intercostal spaces are wide, resection of rib is not required, and occasionally in young children with wide spaces it may be avoided, but usually the intercostal spaces of children are so narrow that removal of a portion of the rib is required; the removal can be accomplished by means of bone forceps. The periosteum had better be removed with the rib. Hemorrhage usually gives but slight trouble. The chest cavity should not be washed out unless the pus is foetid. The solution used for washing out may be a two or three per cent. of boroglyceride, 1 to 1000 of tincture of iodine and water or boric acid. In cases of empyema operated on within a month, recovery is the rule. In chronic cases, suppuration continues after a free opening has been made, for the lung is bound down and cannot expand to fill the cavity from which the pus has been evacuated. In these cases Estlander's operation, consisting of the removal of portions of two or more ribs, should be performed. This operation is very useful, because it allows the chest wall to fall in and enables the surgeon to introduce his hand and break down any adhesions which may have formed. By this means pent-up pus may often be evacuated. Several successful cases are detailed.

At a meeting of the London Clinical Society on the 26th October, 1888 (*Lancet*, Nov. 3rd, '88), Dr. Handford reported a remarkable case of empyema complicated by loss of vision and

bilateral softening of the cerebrum. Patient was a young woman aged 18. In March she was tapped and pus evacuated. In June the cavity was opened by an incision in the fifth interspace and post-axillary line and a quantity of pus evacuated. In August she complained of her eyes, and by September there was total blindness of right eye and then the left. A few days later she became hemiplegic, and died at the end of the month. No distinct abscess of brain found, but there was softening of the occipital lobes, the angular, temporo-sphenoidal, and part of the ascending frontal convolutions on the right side, and on the left side the supra-marginal convolution and the frontal lobe were involved. There was never any hemipia in this case.

In the discussion which followed, Dr. Money said many cases of paralysis occurring during empyema had been recorded which were thought to be functional. He had made three post-mortem examinations in cases of the kind. In each of the three cases abscess of the brain was found. In two of the cases opened by him the brain symptoms did not occur until the rib had been excised. In two cases the brain abscess was on the same side as the empyema. Dr. de H. Hall reported a case where empyema had lasted two years, and when the rib was excised brain abscess terminated the case. One other case was also reported by Dr. Findlay. Dr. Handford, in reply, stated that in his case the rib was not injured, but that free hemorrhage had taken place.

Injection of Sterilized Air in the Treatment of Pleuritic Effusion.—Prof. Potain, in a paper read before the Académie de Médecine of Paris, advocated a new method of treatment for pleuritic effusions. (*Bulletin de l'Académie de Médecine*, April, 1888.) He evacuates the fluid and then forces in sterilized air. In the first case, in which there was extensive tuberculous pleuritis, he evacuated two litres of sero-fibrinous fluid and pumped in sterilized air; the operation was twice repeated, and cure took place in less than three months. A double catheter was used, and whilst fluid flowed out of one catheter air was injected through the other. Prof. Potain's conclusions are as follows: (1) It is possible to replace completely by air the effusions of pleurisy,

provided only sterilized air is used. (2) Air deprived of germs by filtration through cotton exerts no noxious effects and does not provoke decomposition of pleuritic effusions. (3) This procedure counteracts the serious dangers which result from the presence of large effusions in the pleural cavity or from their rapid withdrawal. (4) On the other hand, it enables us to avoid the serious drawbacks of repeated punctures and permits gradual and slow expansion of the lung. (5) Finally, it appears to favor cicatrization and even the definite cure of tubercular lesions by placing the lung in a condition of comparative rest.

Operative Treatment of Pulmonary Abscess.—Dr. Quinke of Kiel reports two cases of pulmonary abscess successfully treated during the past year (*Berliner Klin. Woch.*, No. 18, 1888). A year ago the same author reported two cases treated by operation (*Berlin. Klin. Woch.*, No. 19, 1887). Of the latter, the first had a chronic abscess in the lower lobe of the left lung apparently due to an acute pneumonia two years previously. The abscess was opened, the ribs being resected, and recovery took place with a permanent fistulous opening. Three years after the man was well, the lungs expanded symmetrically, and over the site of operation was a slight depression. The next patient treated in 1887 was a woman aged 26, and presented all the clinical signs of a large pulmonary abscess, including expectoration of much foetid pus. An attempt was made to set up adhesive pleuritis by the injection of iodine, but this failed, so the abscess was opened. Death took place in three weeks from purulent pleuritis. In the two cases treated during the past year complete success was obtained. The first was that of a man aged 32, who, after symptoms of an atypic pneumonia of a chronic character, suddenly expectorated a large quantity of foetid pus, and the clinical signs left no doubt as to the existence of a pulmonary abscess, and not an empyema communicating with a bronchus. The eighth and ninth ribs were exposed on the right side by the use of chloride of zinc after a preliminary incision. Four or five centimetres were then resected, and next day chloride of zinc paste was applied to the bottom of the wound. After a week a capillary thread was introduced, allow-

ing the escape of foetid pus, and the canal thus formed was widened gradually by the thermo-cautery until a proper drainage tube could be passed and the pus evacuated. Within three weeks expectoration ceased altogether, and the man, who had improved daily during this time, convalesced steadily. Four months after the operation the patient had gained 45 lbs. in weight and left quite well. The other case was not quite so typical. A woman aged 23 had an acute illness, the symptoms of which pointed either to abscess of the lungs or an empyema communicating with a bronchus. Exploratory puncture yielded no pus. Cavernous signs were at first absent, and the illness was too acute for bronchiectasis. The operative treatment was the same as the foregoing, and in six weeks patient was sent home cured. In this case the first incision was made in the ninth intercostal space, and chloride of zinc paste applied for eighteen days before the ninth rib was resected. The abscess in this case was never opened, but the pus was evacuated by means of a hollow needle.—(*Abstract of Editorial in British Medical Journal*, Sept. 22nd, 1888.)

Quinke's plan of opening these abscesses is very elaborate and tedious, but it is done with the object of setting up an adhesive pleuritis and so avoiding any danger of pus getting into the pleural cavity and setting up fatal purulent pleuritis. The chloride of zinc paste accomplishes this in a safe and sure way. In the cases reported by Mr. Pridgin Teale, however, the danger of purulent pleuritis seems to have been avoided by free incision and drainage. Some of the cases reported by Mr. Teale are not true pulmonary abscesses, but first subdiaphragmatic or hepatic, discharging through the pleura into the lung. No doubt as our knowledge of lung surgery increases the procedures will be more simple than those advised by Dr. Quinke. Perhaps suturing the pulmonary to the costal pleura before opening the abscess, as recommended by Mr. Godlee, would be better.

Mr. Pridgin Teale, in an address on the *Surgical Treatment of Abscesses of the Lung and Empyema* before the late meeting of the British Medical Association (*Brit. Med. Journal*, Oct. 13, 1888), reported four cases of abscess of the base of the lung

recently under his care which were treated by incision and drainage. Two recovered and two died. In two other cases in which abscess in the region of the diaphragm was suspected he explored with an aspirating needle under ether, but no pus was detected. Both cases died in a few days unrelieved. In one case the collection was thought to be in the pleural cavity, but was found in the lung; in another, it was thought to be in the base of the lung, but proved to be beneath the diaphragm, and the exploratory puncture with the trocar had gone through the pleural cavity and diaphragm before it reached the pus—the abscess was above the liver. Both these cases recovered. The two fatal cases are also interesting. In one, the trocar was thrust between the tenth and eleventh ribs and reached pus; an incision was made, and it was found that the abscess was surrounded by ragged liver; three and a half pints of pus were removed. Then a large opening was discovered in the diaphragm leading to the base of the pleural cavity. The cavity was drained, but febrile symptoms ensuing, another opening was made above the diaphragm, between the ninth and tenth ribs; the patient, however, died two weeks after the second operation. In the other case, offensive pus was found by incision between two of the lower ribs; no relief followed; post-mortem examination revealed abscess burrowing behind the liver and into the posterior mediastinum. Two other cases are also mentioned in the practice of others where recovery took place.

Pulmonary Gangrene Treated by Incision.—At a meeting of the Clinical Society of London, held on the 12th of October, 1888, Dr. Pasteur read a paper on the above subject. The patient was a delicate-looking boy aged 7. His illness was insidious in the onset, but had rapidly developed. On the morning before admission to the Children's Hospital he coughed up a quantity of bright blood, and his mother noticed that his breath was offensive. Ten days after admission he was febrile, had a coated tongue, rapid breathing and gangrenous odor of breath. Over the right upper lobe were impaired, weak tubular breath sounds and diminished voice conduction. During the next three weeks cavity signs developed at the right apex and the remainder of

the right lung became pneumonic ; the temperature ranged between 100° to 103° . He spat up daily two to four ounces of offensive watery fluid, mostly saliva. Mr. Pollard subsequently operated on the boy. The cavity was incised at the anterior extremity of the right second space one inch from the sternum. Large quantities of gangrenous lung and putrid fluid were expelled through the wound. The cavity reached down to the sixth rib. A counter opening was made in the sixth space and flanged tubes inserted. The cavity was washed out daily once or twice. All went well for a week, when the temperature and pulse rose, the fœtor of breath reappeared, and the patient sank three days later. A huge cavity occupied the anterior third of right lung. At the inner part the necrotic process had involved the pericardium and set up pericarditis. The œsophagus was firmly adherent to the right bronchus, and a narrow sinus about three-quarters of an inch long connected the two tubes. No tubercle or caseous suppurating glands. The gangrene was no doubt due to the passage from the œsophagus to the bronchus of some foreign body, probably irritating food material. An earlier operation might have saved the patient.

In the discussion which followed, Mr. Rickman Godlee mentioned a case of gangrenous cavity of the apex of the lung which was opened and drained. The pleura was not adherent, necessitating the securing of the pulmonary to the costal pleura before the abscess was opened. The child died in two days, and then it was found that another gangrenous cavity existed in the apex of the other lung.

Dangers of Resection of the Ribs.—At the late meeting of the French Surgical Congress M. Berger reported two cases of sudden death following resection of the ribs. In patients debilitated by age or long suppuration, or in whom the whole extent of the pleural cavity was involved, he advised that (1) the ninth and tenth ribs be left intact in order to interfere as little as possible with the respiratory movements, and (2) that only a few ribs be resected at a time, thus obtaining a gradual closure of the suppurating cavity. M. Bouilly said he had performed the operation thirteen times, and the best results had been obtained

in persons between the ages of 18 and 21, in whom the chest walls were more flexible and accommodated themselves more readily to their new position. M. Ollier advised that in the child only a narrow section of the bony wall be removed, but in the adult an extensive operation was demanded on account of the inelasticity of the chest walls.

Trephining the Gladiolus for Pus in the Anterior Mediastinum.
—Mr. Ballance (*Lancet*, Nov. 3rd, 1888) reports a case of a lady, aged 35, who was admitted into the St. Thomas' Home for surgical treatment. She complained of a discharging abscess of the front of her chest, accompanied by constant and severe pain and great tenderness along the breast bone, also fever, anorexia, and loss of sleep. Two years ago, after the birth of her last child, she had a severe illness, and was in bed for more than three months with so-called inflammation of the lungs. Since then she has never been quite well. Three months before admission a lump about two inches in diameter formed over the upper part and left side of the sternum; an incision was made and pus evacuated, but a sinus remained. The sternum was here acutely tender and painful. After entrance into hospital another swelling formed over the fourth, fifth and sixth costal cartilages. The patient had rigors and high temperature, so it was determined to trephine the sternum, which was done by two openings, one opposite the second intercostal space and the other opposite the fourth; the intermediate bone was removed and the anterior mediastinum opened and found to be full of creamy pus. The abscess was washed out, and the remaining part of the sternum, which was carious, scraped with Volkmann's spoon. The patient made a rapid and complete recovery, the sternal opening becoming filled up with fibrous tissue. Mr. Ballance concludes his paper with a reference to other published cases of mediastinal abscess, mentioning the cases of Dr. Cooper of San Francisco and Dr. Hanks of Chicago, each of whom trephined the sternum, one to remove a piece of iron and the other a bullet.

Perineal Lithotripsy.—At the recent Washington Congress, in the section of Genito-Urinary Surgery, Mr. Reginald Harrison read a paper on the above subject. After giving a history of

the operation he related four cases in which he had practised it with some modifications of his own. In three cases the prostate was large, and he was desirous of draining the bladder after the stone had been removed. In the fourth case the stone was very large. The external incision is made as for lateral lithotomy, deep into the membranous portions of the urethra as for exploration of the bladder ; a pair of straight, crushing forceps is introduced, the stone broken up, and the fragments removed. When the bladder was free, it is washed out with a sublimate solution and a large drainage-tube inserted ; the tube is kept in for three or four days. Mr. Harrison's forceps consist of a strong pair of ordinary bladder forceps with a cutting rib down the centre. They are sufficiently strong to break any stone that can be grasped ; they are, in fact, constructed on the same principle as the blades of a lithotrite. By means of these forceps used through the perineal incision a large calculus can be broken down in a few minutes, a process which could not be accomplished under half an hour by the ordinary lithotrite and water evacuation.

Treatment of Urethral Stricture by Electrolysis.—This method of treating urethral stricture has been much recommended by some surgeons, especially by Dr. Newman of New York and Mr. Hurry Fenwick of London. At the recent meeting in Washington Dr. E. L. Keyes of New York read a paper (*New York Medical Journal*, Oct. 6th, 1888) in which he narrates his experience. After an extended and faithful trial of electrolysis for stricture he has come to the conclusion that as means of treatment for stricture it is absolutely useless. He said that it is a common belief (1) that anyone by following rules may use the method successfully ; (2) that electricity does no harm to the urethra ; (3) that stricture cured by electricity is dissipated by absorption, and that the urethra remains permanently open. Dr. Keyes says there is no foundation for these beliefs. Every case treated by him was a failure. In one of the cases Dr. Newman himself applied the electricity. In conclusion, Dr. Keyes says: " I may state that electrolysis with a very mild current does no harm ; in fact does nothing that I can appreciate

and does not interfere with the benefit to be derived from gradual dilatation. I believe the strong current is full of danger both immediately from irritating effect and ultimately from cicatricial effect ; and that employment of negative pole does not prevent this. My study of the subject and the experience it has brought me, digested with all the impartiality I possess, lead me to state that the allegation that electricity, however employed, is able to remove organic urethral stricture radically lacks the requirement of demonstration. The confidence of its advocates that it will radically cure organic fibrous stricture is, in my opinion, due either to continued credulity of the patient and the imagination of the surgeon, or to some special, but fortuitous, act of Providence, upon the co-operation of which, in the case of his own patients, the general practitioner cannot with any confidence rely."

This certainly is very strong adverse testimony from a very able genito-urinary surgeon and a very acute observer. The rage for electricity, like every other rage which has disturbed the even tenor of medical science, will soon die out. Like every new remedy (or old remedy newly applied), it is said to cure everything from a uterine fibroid to a pain in the big toe, and indiscreet advocates herald its supposed victories with marked absence of modesty. Series of cases a few weeks old are reported as permanent cures ; others reading the wonders this new remedy accomplishes, provide themselves with enough electrical apparatus to start a telephone company, and having this expensive and garish outfit, use it indiscriminately in every case. The poor patient not only suffers in pocket but in health, still she is delighted to have a fuss made over her, and thinks the doctor is doing wonders. The cases (outside of certain nervous ones) cured by electricity appear to me to be those which furnish brilliant results to faith curers, Christian scientists, and " others of that ilk." No doubt many cases of stricture which can only be detected by means of a No. 25 or 30 sound are benefited by this novel and impressive form of treatment. Like many another much-vaunted remedy when tested in a calm, impartial and scientific manner, a great deal of its glory will pass away, and its true uses and place will be found.

Internal Urethrotomy—Value of Antiseptics.—Mr. Bruce Clarke (*Lancet*, Oct. 13th, 1888) is of opinion that nearly all the febrile attacks which occur after internal urethrotomy are preventible by taking proper precautions. (1) The urethra is rendered as pure as possible by previous irrigation and for several days beforehand both with hot water and corrosive sublimate (1–2000). If the kidneys are diseased or the urine foul then, perhaps, external urethrotomy is the preferable and safer operation. (2) The instrument to be employed should be taken to pieces and carefully scrubbed in soda and water and soaked in carbolic acid (1–20) for at least ten minutes before operation, and only put together the last moment before it is used. (3) When the urethra has been freely divided, a full-sized catheter should be passed into the bladder and retained there for twenty-four hours. The advantages of retaining the catheter are several. The wound is protected from contact with the urine, the tendency to hemorrhage is checked, and the lips of the wound are kept open, thus preventing union by first intention. Great care should be taken that the catheter is aseptic. Mr. Bruce Clarke has treated fifteen cases in this way with the most satisfactory results. Several cases are reported in detail.

Treatment of Enlarged Prostate by Galvano-Puncture.—Biedert (*Deutsche Med. Woch.*, No. 21, 1888) advocates this method. He punctures the prostate through the rectum with a platinum needle, which is isolated up to $1\frac{1}{2}$ centimetres from the tip. The prostate is punctured deeply in two or three places to the depth of $1\frac{1}{2}$ cm. (three-quarters of an inch) and the current turned on for two to three minutes. The needle is attached to the negative pole of a battery of from 12 to 18 elements. If the needle is attached to the anode, cauterization will result and be followed by troublesome abscesses.

Treatment of Piles by Injection.—This method of treating piles was long a secret one, and although it has in the hands of some surgeons proved successful, in many cases failure has resulted. Its chief recommendation to the laity is the fact that the much dreaded knife is done away with. Mr. T. Swinford Edwards states (*Brit. Med. Jour.*, Oct. 13, 1888) that he has

tried this method in 38 cases and has been agreeably surprised at its results. There has been only one relapse, three cases have remained well for two years, and fourteen others from two years to six months. In nine other cases sufficient time has not elapsed to discharge them as cured. Mr. Edwards uses the following formula for the injecting fluid : Acid carbol., gr. xii ; glycerine and water each one drachm, that is, one in ten. He has occasionally, in severe cases, doubled the strength. If the piles are not down an enema should be given. The patient should be placed on a couch on his hands and knees. With a hypodermic syringe into each pile is injected two to five minims of this preparation ; the injection should be performed slowly. The piles are then oiled and returned, and the patient allowed to depart. Mr. Edwards says that there are certain things in regard to this treatment it is well to bear in mind. First make a thorough examination of the rectum to see that no other disease coexists, as, for instance, polypus, fissure, fistula, stricture. Before operating, see that the bowel is empty and the piles are well protruded. If the patient is unable to protrude them with the help of an enema, it is hardly worth while to practice this mode of treatment, and he does not advise injection of the piles through a speculum as recommended by some practitioners. The piles should be returned immediately after operation, and if they come down subsequently should be immediately returned. The advantages of the method are that the patient is not laid up, suffers no pain, and runs no risk from hemorrhage, tetanus, erysipelas, or pyæmia.

Dr. Kelsey of New York, who has used this method extensively, now says that it ought only to be employed in selected cases.

Treatment of Ununited Fracture of the Head of the Femur.—According to a recent number of the *British Medical Journal*, Prof. Loreta has successfully treated an ununited intra-capsular fracture of the neck of the femur by scraping the fractured surfaces and inserting a bundle of eight to twelve metallic sutures between them and brought out at the lower extremity of the external wound. The metallic sutures were left in five days

and then removed. The patient was a man aged 36, who had broken his hip nineteen months previously. The joint was exposed by a long incision behind the great trochanter. In fifty-five days after the operation the patient left hospital, being able to walk with no further support than the attendant's hand.

Disinfection of Surgical Instruments and Dressings.—Dr. Renard states that the disinfection of instruments by a five per cent. solution of carbolic acid is unreliable, the germs withstanding a soaking of from 30 to 45 minutes. Bichloride is reliable, but has a chemical action on the instruments. Heating in the flame of a spirit lamp is efficient. Boiling at 212°F. is efficacious if long continued. Steam at 230°F. destroys all germs if the substance be submitted to it for thirty minutes. Renard has a copper cylinder boiler that he fills about an eighth full of water; baskets containing instruments, and provided with feet that raise them from the surface of the water, are put in the cylinder; a lid containing a manometer and a safety-valve is screwed in place, and by means of an alcohol lamp the water is boiled; the air in the cylinder passes off by a stop-cock in the lid, which is then closed and the pressure is increased until it represents a temperature of 230°F. Absolute disinfection is obtained in half an hour.—(*Quoted in Boston Med. and Surg. Journal*, Sept. 20th, 1888.)

Treatment of Erysipelas.—Nussbaum applies an ointment of equal parts of lanolin and ichthyol and then envelops the parts in salicylated cotton. Next day it will be found that the erysipelas has not only not advanced, but that there has been a notable amelioration of all the morbid symptoms. The swelling, redness and pain has diminished. It is, according to the author, seldom necessary to continue the application for more than three days.—(*Allgemeines Wiener Med. Zeit.*, 1888.)

Surgery of the Brain.—Drs. Seguin and Weir, in an elaborate article on the diagnosis and treatment of tumors of the cerebrum (*Amer. Jour. of the Medical Sciences*, July, August and September, 1888), discuss the present state of the surgery of the brain from both a neurological and surgical standpoint. Dr. Seguin is of opinion that the diagnosis of a case of supposed

tumor of the brain should, before operation is attempted, be carefully worked out on the following five lines of inquiry: (1) The diagnosis of the tumor within the skull, and more especially in or upon the cerebral hemispheres. (2) The diagnosis of the exact location of the tumor. (3) The diagnosis of the depth of the tumor; whether it be cortical or subcortical. (4) The diagnosis of solitude or multiplicity of the tumor. (5) The diagnosis of its nature. After discussing these points very fully he states that "the surgeon must be content to have the physician furnish him with a reasonably exact diagnosis of the location of the tumor and with a probability diagnosis of its solitude." A case of removal of a subcortical sarcoma lying below the edge of the second frontal and the anterior edge of the præcentral gyri is described. A German, aged 39, had suffered for two years from epileptiform convulsions, and for several years before had spasmodic twitchings. The patient suffered, while under observation, from right-sided Jacksonian epilepsy, with facio-brachial paralysis, which pointed to a tumor, probably sarcomatous and subcortical, of the left motor zone in the facial centre. Dr. Weir removed a portion of the skull, 3 by 2 inches, and exposed the brain in this region. The membranes being opened, the brain was seen to bulge decidedly into the opening; firm pressure at the posterior part of the opening encountered a deep resistance of a hard mass. It was readily enucleated with the aid of a Volkmann's spoon. The patient made a good recovery, being allowed to go home after a month in good general condition. He still had, however, occasional twitchings, some headache, and slight paresis of right lips and cheek.

Dr. Weir, in the September number of the *American Journal of the Medical Sciences*, discusses the surgical procedures necessary in the proper removal of brain tumors. He advises a curved flap both of the scalp and dura mater, as this secures after protection of the brain. Hemorrhage from the large scalp incision may be controlled to a considerable extent by encircling the head tightly in a line with the occipital protuberance with a rubber band, as suggested by Dr. M. A. Starr. The careful outlining of the region to be explored in the shaven scalp is of

no avail after this has been lifted away, and the plan suggested in his recent cases of indicating the site of the trephine centre on the bone itself answers very well. The cranial opening should be a large one. Weir uses a one-inch trephine, Horsley a two-inch. The intervening line can be quickly cut away with a rongeur forceps or a dental or electrical bone cutter. The dura mater should also be freely opened, and the exploring needle is not recommended, as he has known fatal hemorrhage follow its use; diagnosis of a subcortical tumor can generally be made by palpation with the finger of the bared convolutions; the finger may be insinuated under the long edge of the opening to a short distance with safety. Important vessels, such as the longitudinal or lateral sinuses, after the removal of the superjacent skull, can be lifted from their places and drawn aside without risk by pulling upon the dural flap. The closure of the opening in the skull is best accomplished by the replacing of the trephine buttons in cloths wrung out of 1-60 carbolic lotion and kept warm during the operation by immersing the vessels containing them in warm water. Hemorrhage from the bone can be controlled by pressure, plugging, or, better still, by crushing the edges of the opening with blunt forceps. Bleeding from dural vessels may be checked by catching them up with a tenaculum and applying a ligature; vessels of the pia mater are easily torn, and bleeding is best checked by securing them with a tenaculum and applying a ligature with equal traction of its ends. All hemorrhage being checked, a small perforated rubber drainage-tube should be inserted, to be removed the second or third day as the case demands. The dural flap is then stitched with fine catgut; the bone fragments should be now replaced with a few shoots of horse hair inserted among them, to emerge with the drainage-tube. The scalp flap is returned and sutured; over all a sublimate dressing should be applied, with iodoform dusted over the layer resting on the wound. After operation it is better to keep the head elevated.

The remarkable address of Dr. Wm. Macewen at the recent meeting of the British Medical Association in Glasgow has already been alluded to in my address on *Recent Advances in Surgery*

published in the Nov. number of the JOURNAL. Space will not permit to quote very fully from an address which has already been so widely published (*Lancet* and *Brit. Med. Jour.*, Aug. 11th, 1888). He reports twenty-one cerebral cases (exclusive of fractures of the skull or other immediate effects of injury) in which operations had been performed by him, in which number there were three deaths and eighteen recoveries. Of those who died all were *in extremis* when operated on; two were for abscess of the brain, in one of which pus had already burst into the lateral ventricles, in the other, suppurative thrombosis of the lateral sinus had previously led to pyæmia and septic pneumonia. The third case was one in which, besides a subdural cyst over one of the hemispheres, there was extensive softening at the seat of the cerebral contusion in the opposite hemisphere, accompanied by œdema of the brain. Of the eighteen who recovered sixteen are still alive in good health, and most are at work, leaving two, who have since died, one eight years after the operation from Bright's disease, the other forty-seven days after operation from tubercular enteritis. Noting the fact that the removal of large pieces of the motor area produces permanent hemiplegia of the innervated side, Dr. Macewen recommends caution and exercise of judgment in operating on the brain. Each case should be studied on its merits, and surgeons who attempt these operations need not only experience in general surgery but an accurate knowledge of motor and sensory phenomena in connection with the localization of the functions of the brain. He calls attention to the anchoring of the brain to the membranes and the membranes to the skull apt to be caused by plastic effusion and cicatricial formation. The free play of the brain within its water-bed is thus impeded, and every movement causes pulling at this point, with consequent vertigo and subsequent fits, and still later encephalitis. He says that hernia cerebri after operation is always due to decomposition, and that it may be avoided by aseptic measures. False hernia cerebri is identical with red softening of the brain occurring in idiopathic affections without operation, and consequently in these cases hernia would not be obviated by sepsis. In speaking of the note

elicited by percussion of the skull as an aid to diagnosis of the consistence of intra-cranial contents, he says when the skull is intact and the ventricles distended with fluid such as may arise in consequence of tumor in the cerebellum exercising pressure on the fourth ventricle, the percussion note elicited affords indications of the altered consistence of the intracranial contents. Dr. Macewen thinks this will be of the utmost value in early life in the diagnosis of tumors of the cerebellum.

At the recent meeting of the American Physicians and Surgeons in Washington Dr. Wm. Keen of Philadelphia exhibited three cases of brain surgery in which he had successfully operated (see *Amer. Journal of the Medical Sciences*, Oct. 1888). The first was a case of removal of a large tumor in the cerebrum, probably arising from an injury at three years of age, in which there was epilepsy and hemiplegia at 23. His age was 27 when the tumor was removed. The patient made a good recovery, and has since been free from his epilepsy. The tumor weighed nearly four ounces and measured 3 by $2\frac{1}{2}$ inches. The second case was that of a man aged 25, and was one of simple depressed fracture of the skull followed in four months by epilepsy; thirteen months later the skull was trephined and the damaged bone tissue removed. The patient recovered in seven days and was cured of his epilepsy. The third case was one in which the cerebral motor centre for the left wrist and hand had been removed for epilepsy with recovery.

Trephining the Spine for the Relief of Paraplegia.—This operation has been performed many times during the present century for the relief of paralysis following injury. Ashurst has collected 43 cases of such operations, but trephining for the pressure paralysis of spinal caries has not often been performed. Dr. Macewen, in his late epoch-making address at the British Medical Association meeting in Glasgow, stated that he had operated on no less than six cases. In all, the posterior arches of the vertebræ were removed, four to relieve paraplegia caused by pressure from connective tissue neoplasms and displacements of the vertebræ due to caries and traumatism. Out of the six cases operated on four were successful and two died. The first

case was operated on as early as 1882; this was one of paraplegia with incontinence of urine and fæces due to connective tissue tumor at the seat of an angular curvature of spine. The patient was nine years of age, had suffered from complete motor and sensory paraplegia with incontinence of urine and fæces for two years. For three years he had had angular curvature of the spine, most marked between the fifth and seventh dorsal vertebræ. The patient had been treated by extension and plaster jackets. His case being apparently hopeless, operation was decided on. The laminæ of the fifth, sixth and seventh dorsal vertebræ were removed. There was no pulsation in the portion of the cord exposed. Between the thecæ and the bone there was found a fibrous neoplasm of an eighth of an inch in thickness which was firmly attached to the thecæ and covered about two-thirds of its circumference. This was carefully dissected off. The cord was then able to expand backwards, and its pulsations, which up to this period were absent, began to show themselves, especially opposite the fifth dorsal. Twenty-four hours after the removal of the pressure the limbs had lost their livid color, were distinctly warmer, the spastic rigidity had greatly lessened, the sense of tickling the soles had returned, and touch had improved. Eight days later return of movement was observed. Soon he regained perfect control of his sphincters. Six months subsequently he was able to go about without support. Five years afterward he walked three miles to pay Dr. Macewen a visit, and now he is attending school, joins in all games, including foot-ball, and feels strong.

A second but more aggravated case is also related. The patient was a girl and the symptoms indicated changes in the cord itself, which rendered the operation almost hopeless. Operation was only performed at the urgent request of the girl herself. The spine was cut down upon and a dense connective tissue tumor was found between the bone and the thecæ, which was so firmly adherent to both that in some places the thecæ was elevated along with the neoplasm. The portion of the cord exposed was shrunken to half its dimensions and lay like an inanimate rod. The elevation of a sufficient number of laminæ to expose

a portion of the cord which pulsated was followed by pulsation of this rod, but there was no distensile pulsation. From the appearances presented at the operation it was considered that there was no hope for her recovering from her paraplegia. However, ten hours after the operation the limbs had lost their lividity and felt warmer to the touch. Four days after operation she had continence of urine and fæces; sensation quickly returned, motion very slowly. In six months she could move her limbs freely, and in eight months she walked a quarter of a mile. Since then she has been well and been able to attend to light house duties.

A third case was also successful, but two others have not been so. One succumbed a month after operation, and the other some months later to an attack of general tuberculosis. In both these cases the temperature was high prior to operation, and subject to exacerbation. Since this experience Dr. Macewen has deemed no case fit for operation in which the temperature did not run an even, regular and continuously normal course.

Another case of paraplegia due to traumatism is also reported. Operation was performed, resulting in the finding of a connective tissue tumor, which was removed. The patient some time after was able to walk about with support, and a year after he walked about with ease without support, but with a paraplegic gait.

Mr. Victor Horsley's case of successful removal of a spinal tumor causing paraplegia has already been alluded to in the Retrospect. In the *Lancet* of July 14th, 1888, Mr. J. H. Thompson reports a case of trephining for the relief of Potts' paraplegia. A boy aged 7 was admitted into the Manchester Hospital for Sick Children suffering from angular curvature of the spine involving the mid-dorsal region. There was paresis of the lower limbs, with apparent psoas contraction and wasting of the muscles of right side. In spite of the usual treatment by rest, cauterization, etc., the condition grew worse until complete paralysis of both lower extremities with incontinence of urine and fæces ensued. It was then decided to open the spinal canal and relieve pressure. Mr. G. A. Wright performed the operation. An incision about four inches in length was made

along the lines of the most prominent spinous processes and the soft parts on each side separated so as to expose the osseous surfaces. Three laminæ were divided on each side and were removed with their attached spines, uncovering the theca of the spinal cord, which at the lower exposed part was found surrounded by a buff-colored, tough, leathery substance; this was cut away with scissors. No point of constriction could be found. The wound was closed and a drainage tube left in. There was temporary improvement evidenced by pin-pricks being felt in the left foot and power of flexion of both thighs, but this soon was lost, and patient relapsed into his former condition. Two months after operation the child was as bad as ever.

Mr. Wm. Thorburn reports a case (*Brit. Med. Jour.*, Sept. 22nd, 1888) which occurred when he was house surgeon in the Clinical Hospital at Manchester in 1885, under the care of Dr. Maccall. A boy aged 6 years had a history of being previously well, when he began to complain of pain in his chest. On the 5th of March he went to bed as usual, and on awaking next morning he was paralyzed. Examination revealed marked prominence of the third and fourth dorsal vertebræ, with absolute paralysis of sensation and motion below the third and fourth dorsal nerves. The boy rapidly became worse, and had a temperature of 104.8° . As he was evidently sinking it was decided to trephine over the prominent spines; this was done, and on the cord exposed some pus was evacuated and the child breathed more freely for a time, but next day the boy died asphyxiated. No post-mortem was held.

These cases are interesting, and although the two latter did not terminate favorably, yet with Dr. Macewen's experience we should feel encouraged, and hope that in the future permanent relief may be offered in those cases where the paraplegia is unaccompanied by elevation of temperature. In Dr. Macewen's second case we see how a patient in an apparently hopeless condition recovered sufficiently to go about and attend to her household duties. Certainly Dr. Macewen's marvellous results will lead surgeons to alter their former opinions regarding operation in cases of paraplegia due to curvature from spinal caries. It

seems remarkable that the wonderful results obtained by Dr. Macewen, although published in 1885 in the *Glasgow Medical Journal* and the *British Medical Journal*, have hitherto attracted but little attention.

Relapsing Typhlitis Treated by Operation.—Mr. Treves (*Lancet*, Feb. 18th, 1888) says that in the majority of cases of so-called typhlitis the appendix is the cause of the disease, and the perityphlitic abscess is more usually an encysted peritonitis due to perforation of this process than to disease of the cæcum. The appendix may become the starting point of inflammation by reason of congenital deformities, of changes that take place in its mesentery, producing bending, of the lodgement of foreign bodies and concretions that are encouraged to remain unmoved on account of the feeble muscular coats of the tube. The source of manifold disturbance can be destroyed by removal of the appendix or by correcting any little deformity of which it is the seat. The statistics of Fitz show that in 11 per cent. of the examples of this affection the patients were the subjects of successive attacks. In one case quoted, five attacks occurred in eighteen months. A case of relapsing typhlitis in a man aged 34 was reported by Mr. Treves, in which, between the attacks, the appendix was cut down upon, found diseased, and removed. The patient made a good recovery and remains free from further relapses.

Inflation of the Stomach with Hydrogen Gas in the diagnosis of Wounds and Perforations of this Organ.—Dr. Nicholas Senn (*Medical News*, Aug. 25th, 1888) reports a case of wound of the stomach detected by means of the inflation of hydrogen gas. The patient was a man aged 72, who was brought to the Milwaukee Hospital suffering from suicidal pistol wound of the chest. The wound was situated in the sixth intercostal space, and the seventh rib, at its junction with the costal cartilage, was fractured. Blood vomited and expectorated. No hæmo- or pneumothorax. A flexible tube was introduced into the stomach and hydrogen gas forced in. Gas escaped and ignited at the wound of entrance. Laparotomy was performed and the stomach and omentum drawn into the wound. A large perforation was found

in the stomach midway between the cardiac and pyloric end on the greater curvature, and another was detected in the lesser curve. The wounds were closed with Czerny-Lembert's suture with great difficulty. Blood in considerable quantity was found behind the stomach. The patient's condition now became serious, and he died before the abdominal wound could be closed. After death the abdominal wound was sutured and inflation of hydrogen gas per rectum made to test the condition of the sutured stomach. A stomach tube was introduced and the gas under pressure of not more than a pound forced through the entire gastro-intestinal canal, igniting and burning with a considerable flame as it escaped from the end of the stomach tube, which showed that no gas escaped through the sutured wounds. At the post-mortem examination both pleural cavities were found obliterated by old adhesions, which accounted for the absence of hæmo-thorax; the diaphragm was perforated and lower lobe of left lung; tail of pancreas lacerated; the bullet then passed through the left crus of diaphragm, fractured the last rib, and perforated the spinal column, opening the spinal canal. The bullet was found under the skin in the right lumbar region. Dr. Senn says he has been able to make a correct diagnosis in several cases of obscure abdominal tumors by resorting to rectal and stomach inflation with hydrogen gas, which otherwise would have needed an exploratory laparotomy. The relation of tumors to the different organs can be mapped out and studied with great accuracy by dilating the stomach and different portions of the intestinal canal at intervals with hydrogen gas.

Curative Action of Erysipelas on Tumors.—Prof. Bruns (*Beitrag zur Klin Chir.*, Bd. III, Hft. 3) reports a case of cure after erysipelas of a recurrent melanotic sarcoma of the breast. He has collected 22 cases. In five cases of sarcoma, three were completely and permanently cured (Busch, Biedert and Bruns), the remainder were diminished in size, but soon increased again. The same result followed six cases, in which the diagnosis of carcinoma or sarcoma was not definitely made, and also in three cases of epithelioma. Two cases of scar keloid and one of lymphoma were completely cured after erysipelas. These

cases caused the recommendation of erysipelas as a curative measure in cases of malignant tumors which could not be operated on. Fehleisen impregnated with his erysipelas culture five patients, with the result of partial cure. Janicke (1884) reported a case of cure in mammary sarcoma. The curative action of erysipelas is not only confined to malignant tumors, but is serviceable also in chronic skin diseases, ulcers, lues, etc. On the other hand, tumors have been spontaneously cured after other febrile affections, as typhus, pyæmia, etc. ; and Bruns says that fact proves that the disappearance of the tumor is caused by fat metamorphosis of the cell elements and absorption of the same through the fever, and is not due to invasion of cocci, for tumors have disappeared where the erysipelas had not spread to the region of the tumor. The scientific employment of erysipelas for the purpose of removal of tumors should be placed on a proper basis. Unfortunately, hitherto we have had no sure means whereby erysipelas may be inoculated. Two cases (Bruns and Biedert), in spite of repeated inoculations, resisted the influence of erysipelas.—(*Quoted in Centralblatt f. Chirurgie*, No. 34, 1888.)

Dr. L. Feilchenfeld, in an article (*Archiv für Klin. Chir.*, Bd. xxvii, Hft. 4) on the inoculation of erysipelas in cases of breast cancers unfit for operation, reports such a case which had been lately under his care, and where the inoculation of erysipelas proved rapidly fatal. The patient was a strong, healthy woman, aged 47, who had cancer of the breast with involvement of the axillary and cervical glands. He is of opinion that surgeons will hesitate to employ such a dangerous remedy for the cure even of cases of cancer in which operation is out of the question, until the intensity of the poison has been so modified by culture as to produce a merely local action. The culture with which he inoculated his patient was supplied by Dr. Fehleisen, who himself performed the inoculation in two spots over the deltoid and two on the breast scar.

The Rational After-treatment of Surgical Cases.—This is the title of a most interesting paper which appears in the forty-fifth volume of *Guy's Hospital Reports* (1888) by C. H. Golding-Bird. Many surgeons give particular directions as to when and how to operate, but say very little about the after-treatment. Mr. Bird looks at the subject from the medical side, and says that however "pure" or special a surgeon may be, unless he is to be regarded as a mere operating machine, this side of the question must be studied. In speaking of spinal caries he says that when the patient is long since as well as he can ever be he often persists in wearing some spinal appliance, hoping thereby to better himself. The author holds it is kindest and wisest to tell such a patient to put aside his artificial aids and to face at once the "struggle for existence," and cease to buoy himself up with false hopes of further improvement. No doubt specialists (mechanical specialists in particular) are most to blame for this state of things. Continual tinkering with a case which never can be further improved tends to keep up a condition of invalidism and dependence on others which is very demoralizing to the patient. In the treatment of *lateral spinal curvature* the author has had a certain measure of success, but he considers this due to the throwing of the work of cure on the patient herself than by letting her imagine she was a passive item in the process; he knows no cure for this disease of which the major part is not the patient's own effort. Once let the Rubicon of hopeful *curative* treatment be passed, "and then, instead of consigning the case to the limbo of incurables, it may by scientific treatment be made to face its new condition of life and again take its place in the world with more or less activity." In the chronic after-treatment no rule can be laid down definitely; each case must be studied by itself.

After an operation the patient may have collapse with cold surface, which delays recovery ; this is often due to the anæsthetic not having been properly administered : it has been given too slowly whereby the patient gets saturated, or not continuously enough, so that the shock of the operation is physiologically appreciated though not consciously felt. Here the administration of alcohol by mouth and rectum is advisable, and also hot packing. In such cases vomiting may be expected ; idiosyncrasy has as much to do with this as with sea-sickness. To prevent sickness after operations Mr. Golding-Bird is in the habit of giving a half to one pint of warm water, or salt and water, to make the patient sick outright, and then to give immediately half a small biscuit or any solid at hand. This method he says rarely fails.

Anodynes are too frequently given after operation to allay pain ; position, support, relief from pressure, should be tried first in all suitable cases. When anodynes are necessary, none are worth considering beside opium, though he has learnt to fear it in severe collapse, as after nephrectomy ; here alcohol freely used is better. He prefers solid opium to morphine, and objects to the hypodermic use of the latter after operation ; the immediate effect is agreeable, but transient, and its frequent repetition rapidly develops a craving for it. The patient becomes the slave of the syringe, and the administrator soon becomes the slave of the patient. When pain is not the cause of insomnia after operations, simple soporifics should be given. In these cases the surface of the body is often bloodless and chilled, and the cavities engorged with blood ; the state of brain anæmia necessary to sleep is absent. In such cases the hot pack with blankets should be used till patient sweats, aid cutaneous vascular dilatation by alcohol or Dover's powder, and as soon as the skin moistens the feeling of restless misery disappears. Again, the patient may sleep in the early part of the night, but wakes in the early morning restless and uneasy. Such a condition is seen in exhausted and aged patients, and the cause is frequently an empty stomach. A hungry man cannot sleep. In such cases a very little solid food suffices ; half a biscuit will determine blood to the stomach and produce a feeling of comfort, just enough to turn the balance

in favor of sleep. Our author prefers oatmeal biscuits, because the more we can worry the mucous membrane of the stomach the more likely patient is to sleep. The supposed soporific effects of lettuce, as Lauder Brunton remarks, are due probably less to the lactacin than to the indigestible cellulose the man puts into his stomach at supper time. In cases, then, of morning restlessness give food, not drugs. In the old, if not given by the mouth it should be given by the rectum, and a renewal of hot bottles and blankets must be seen to, for temperature and pulse at this time are alike low, and for this reason, in the aged and exhausted, the early morning hour should be most dreaded. This explains why, as morning breaks, many cease to exist; life may be saved in some instances by proper treatment. Chloral is to be preferred as a soporific. Bromide of potassium depresses the patient and upsets the bowels. In an insomniac patient, the belief that a soporific is being given often induces sleep, hence the usefulness of pure water subcutaneously and the administration of the good old bread pill.

Rectal feeding is most valuable in after-treatment; it is far better to give the meal already peptonized. The following formula is recommended: Beef-tea, $\bar{3}i$; yolk of an egg; liq. pancreat., $\bar{5}i$; wine, $\bar{3}ss$; warm milk to $\bar{3}iii$, with a pinch of bicarbonate of soda. Drugs are added if required, or the wine is omitted. The enema should not exceed three fluid ounces, and must be given with a three-ounce ball syringe fitted with a four-inch gum-elastic nozzle, and be injected at one squeeze, without any admixture of air, the patient's buttocks being slightly raised. Firm pressure must be maintained on the anus for a minute after the withdrawal of the syringe. In this way the author has fed patients every four hours for days together without the slightest rectal irritation.

After a severe operation the patient can be most influenced through the skin. In collapse the skin is cold and bloodless, there is passive congestion of the viscera, and feeble heart's action. Knowing this, the treatment of this grave condition is indicated. Hot pack with blankets and bottles to the chin, do not even allow a hand out; when once cutaneous circulation is

established the patient is comfortable. In chloroform vomiting, when the skin is cold, this method is a valuable one. In speaking of peritonitis, Mr. Golding-Bird says patients do not die from the height of the fever. The case dies with cold extremities, passively suffused face, and a generally anæmic condition of the surface of the body. The patient vomits incessantly, and goes out like the snuff of a candle. It is very much like a death from exposure. The whole of the blood can be accommodated in the portal system. After perforation of the bowels, the condition is much like that of internal hemorrhage. The pulse is small, rapid, weak, the patient sighs and gasps for breath, struggles or craves for drink. He is really *bleeding to death into his portal area*.

After *abdominal operations* the author relieves the congested peritoneum. No ice or cooled drinks ; nothing by the mouth. Enema above-mentioned, with opium and port-wine every three or four hours. The wine allays the craving for fluids at once ; the opium allays peristalsis and pain, and assists the skin to act. Hot packing till sweating occurs, a pillow under the thighs, but not a hand above the bedclothes. The moment reaction sets in sleep will be obtained. This treatment should be adopted after all hernia operations.

In conclusion, the author states that the influence of the environment upon the patient is too often disregarded for the more easy and empirical administration of drugs, whilst rational influences lie ready to hand unnoticed.

Arthrectomy.—At a meeting of the Royal Medical and Chirurgical Society of London, held November 13th, 1888, Mr. Edward Owen read a paper on the above subject. He advised arthrectomy especially in cases of pulpy or chronic synovitis of the knee-joint, provided the bones were not implicated and that the patient was not the subject of general tuberculosis or of albuminoid degeneration. It had an advantage over excision, viz., that it took away from the articular surfaces only such tissues as were diseased.

In the discussion which ensued Mr. Bryant stated that he had performed similar operations as far back as 1866.

Mr. R. Parker thought, in young children, that arthrectomy was the preferable operation, and the cases best suited were those that had neither bone disease nor sinuses. He did not advise the removal of the crucial ligaments.

Mr. Owen said in reply that he found it impossible to thoroughly clean the back of the knee-joint unless the crucial ligaments were divided; their destruction was not of much moment, as a fixed joint, not a movable one, was desired.

Mr. Herbert Page has an elaborate article in the *Lancet* of Nov. 17, 1888, entitled *Arthrectomy v. Excision of the Knee*, in which he strongly advocates early operation and removal of the diseased structures by the knife or scissors. In arthrectomy nothing is sacrificed but the diseased structures, and the growing limb can be preserved in its natural length. In cases where arthrectomy has been performed there is improvement in the general health as soon as the diseased structures have been removed. In many early cases, where the disease is limited, a movable joint may be obtained, but the author is inclined to think that good, firm ankylosis is the thing for which we ought to strive; and it is therefore unnecessary to be particular about saving bits of the crucial ligaments which may prove to be healthy and to resuture the ligamentum patellæ. At best the operation is a long one, and the saving of time is of some moment to the patient. Mr. Page exposes the joint by the old horse-shoe incision, which curves below the patella.

Mr. G. A. Wright (*Lancet*, Dec. 1, 1888) claims that the operation of excision or arthrectomy has been in use in the Children's Hospital, Pendlebury, since 1881, and cases were published in the *Lancet* of that year. He thinks the operation more applicable to the knee joint, though he has performed it in the elbow and ankle. In the knee joint he advocates the transpatellar method, and drains through the back of the joint. The results in successful cases, Mr. Wright says, are better than in those of excision; there is no shortening either immediate or as growth goes on, while the results in other respects are like those of excision, for a firm, stiff, straight limb is obtained. The operation is applicable to those cases of disease that resist treatment

by rest, but are not so far gone as to require amputation, in fact the majority of cases which are now excised. The operation is chiefly applicable to children. He confesses to many failures in cases where excision was afterwards necessary, but the patient has never suffered from the double operation.

The following points are to be noticed : (1) Full exposure of every cranny in the joint. (2) Absolutely complete removal of all disease, scraping out any doubtful bony spots. (3) The crucial ligaments should be preserved if possible, as they tend to steady the joint afterwards. (4) The limb should be well fixed until healing is complete, then the patient may get about on crutches and a patten in Thomas' knee-splint, or with the limb fixed in plaster-of-Paris. (5) As in excision, flexion will occur unless the limb is kept fixed for from two to three years at least. (6) In some cases actual lengthening of the limb occurs after the operation, just as overgrowth not uncommonly follows necrosis from acute periostitis. Mr. Wright, since his series of 16 cases published in 1885, has had nine operations on the knee and one on the elbow ; out of these five have done well and three are yet incomplete.

Arthrectomy of Knee-joint in Children.—Dr. Mandry (Tübingen) says that resection of the knee-joint is now almost universally acknowledged an unjustifiable operation ; he advocates extirpation of the capsule and scraping out of any tuberculous foci. Incision is made over and through the patella or tendon of the quadriceps ; all diseased structures are removed, but no healthy cartilage or bone substance. The joint is irrigated with sublimate solution and the wound in soft parts and patella sutured with catgut. Watson's splint is applied, and finally plaster-of-Paris bandage. The results in seven cases were : in one, almost normal mobility of the joint ; in five, ankylosis ; and in another case the disease returned and excision had to be performed. The author has collected 63 cases operated on by Volkmann, König and others, and an analysis of these and his own brings him to the following conclusions : In 27 per cent. the operation was unsuccessful on account of recurrence of the disease, necessitating resection or amputation ; 63 per cent. were cured, and

in three cases elongation of the diseased extremity resulted. Slight degree of flexion is noticed in 53 per cent. Hoffa some years ago said that shortening of the limb was not greater after resection than after conservative treatment provided the epiphysis of the femur was not interfered with. Mandry is of opinion that arthrectomy gives better results; on the other hand, he acknowledges that after arthrectomy there exists a greater tendency to flexions. Of the 44 cases which did well after operation, eight recovered with movable joints.—(Quoted in *Annals of Surgery*, Dec., 1888, from *Beitrag zur Klin. Chirurgie, Klinik zur Tübingen*, Bd. iii, Hft. 2.)

There is no doubt that for many cases of knee-joint disease in children arthrectomy is the proper operation. It is less severe than excision, and, if successful, the patient recovers with a limb which is of the same length as its fellow; if it should fail, then excision may still be performed with benefit. The difficult questions to decide are, when to operate? and, how long should the treatment by rest be practised before arthrectomy is determined on? The many failures which follow arthrectomy are due to the surgeon not having completely removed the diseased tissue, and any one who has performed this operation will understand the great difficulty of knowing when all disease is removed. The disease is certain to recur if any diseased structures are left. Excision, whilst a more radical operation, necessitates the removal of much healthy tissue along with the diseased, and, besides, shortening necessarily results. The method of excision introduced by Dr. Fenwick of Montreal, and practised by Kocher of Berne, whilst it leaves intact the epiphysal line and so does not interfere with future growth, preserves the length of the limb at the time, many of the cases recovering with a shortening of half an inch. Dr. Fenwick's method* is to round off the end of the femur and to make a slight concavity in the upper end of the tibia for the femur to fit into; only a thin slice of bone is removed with a fine fretwork saw. In this way the position of the limb is maintained with but slight loss of bone.

* See Ashurst's International Encyclopædia of Surgery, vol. iv.

Primary Union after Excision of Tubercular Hip Joints.—

At the meeting of the Royal Medical and Chirurgical Society of London, held December 11th, 1888, two papers were read on Primary Union after excision of Tubercular Hip Joints, by Mr. Barker and Mr. Bilton Pollard. (*Lancet*, Dec. 15th, 1888.) Mr. Barker stated that his conclusions were as follows: (1) That scrofulous, or, in other words, tubercular joint disease was a local expression of infection of the tissues with the bacillus tuberculosis, and ran, as a rule, a course beginning in hyperplasia and ending in fatty degeneration. (2) That at a certain stage of the disease the complete removal of the infected tissues ought to be possible. (3) That if complete removal of the tubercular tissue from the hip be accomplished, the resulting wound ought to heal in many instances by first intention throughout, as in the case of the knee, and often even without any necessity of drainage. The author then described a case which was operated on some months before. The patient was a boy, aged five years, who had been under treatment for hip disease for a year; this had resulted in necrosis of the head of the femur and abscess. The child was operated on, primary union resulted, and patient left hospital on the fourteenth day wearing a double Thomas' splint, which was removed on the eighth week after operation. The child began then to run about, and has been quite well ever since. The case was exhibited.

Mr. Pollard drew attention to the fact that the wounds necessary for extirpation of tubercle from joints would heal as rapidly and as permanently as other wounds of a similar size if essential conditions were secured. (1) The whole of the tubercular growths must be removed. (2) Perfect asepsis must be assured. (3) Bleeding must be checked and the wound made as dry as possible. (4) Oozing must be restrained by the even elastic support of a wool dressing and a moderately tight bandage. (5) Absolute rest of the part must be maintained during the process of healing. Four cases of hip joint disease operated on by the author were referred to; three were operated on by the anterior incision and one by a curved incision round the upper and posterior part of the trochanter. No drainage was employed.

The dressings were removed on the seventh day and the wounds found completely healed. In one case where there was perforation of the acetabulum the disease recurred, the others recovered well, and were exhibited at the meeting.

In the discussion which followed the reading of the paper nearly all the surgeons condemned early excision ; treatment by rest and extension was advocated, and the results were stated to be better. Early excision was apt to be followed by recurrence of the disease or a badly developed limb. Mr. Croft looked upon this form of treatment with healing by first intention as marking a new epoch in surgery. Mr. Wright of Manchester stated that he had 800 cases of hip-joint disease under his care during the last few years, and had performed excision 130 to 140 times ; he preferred section of the bone through the trochanter rather than above it. It was necessary, after excision, to keep the joint at rest with a Thomas' splint for six months or a year. Mr. Hulke said it was interesting to hear that synovial membrane could be thoroughly removed by scraping through the small anterior incision, especially as in arthrectomy of the knee-joint a large incision was necessary to thoroughly clear away the diseased tissues. The anterior incision was first introduced years ago by Hueter of Greifswald.

Early excision of the hip-joint with union by first intention is apparently a revelation to London surgeons, although it has been practised for years by Volkmann of Halle and Macewen of Glasgow. The latter's success in these cases is marvellous, and cure in one dressing is the rule. I saw many of his cases in 1887, and was amazed at the rapid recovery ; children six weeks after excision could go about and flex and extend the excised hip as well as the healthy one. Macewen's work on the surgery of joints appears to be as little known in London as were his operations on the brain and spinal cord, until his epoch-making paper of last year was read at the meeting of the British Medical Association.

The after condition of cases which have been the subject of early operation is important, and no certain information is published on this point. Are the limbs of these children after, say,

ten years as serviceable as when the treatment by rest and extension has been practised? Volkmann is not so enthusiastic now as he was some years ago about early excision of the hip. The after-results of his cases were not as satisfactory as regards the condition of the limb as could be wished. The early operation, and, in fact, every operation for excision of the hip-joint is better performed by the anterior incision introduced by Hueter in 1878. It commences in front of the thigh half an inch below the anterior superior spine of the ilium and runs downwards and a little inwards for three inches. The incision goes down between the tensor fasciæ and rectus femoris muscle, and no muscular fibres need to be divided. When the joint is reached the neck of the femur is sawn across, the diseased head lifted out, and the remaining diseased tissue gouged out with a strong spoon. The wound should be thoroughly irrigated and not sutured until all bleeding has ceased. According to Dr. Barker (*Brit. Med. Jour.*, Jan. 14th, 1889) this method of treatment has many advantages. The operation is free from danger, the limb is but little shortened, and the cure is attained in as many weeks as it previously required months. Mr. Barker claims great credit for advising flushing of joints during and after operation with hot water, and thinks this has not been used before. The practice is not a new one, and is one which would naturally occur to most surgeons. It has been frequently made use of in the Montreal General Hospital and many other hospitals. His flushing gouge is no doubt an original idea, but, as far as I can see, possesses no special advantages. This gouge is hollow, and has attached to its handle the rubber tube of the irrigator, so that the cutting edge of the gouge receives the full force of the water-stream rushing through the handle. The technique of the operation described by Mr. Barker is that which has been followed by German and American surgeons for several years past.

Partial Resection of Symphysis Pubis in Operations on the Bladder.—Dr. Helferich, at the seventeenth congress of German surgeons, held last April, read a paper on the above subject. (*Beilage zum Centralblatt für Chirurgie*, 1888, No. 24.) He has removed a portion of the symphysis pubis in three cases in

order to more readily reach the bladder. In one case the condition necessitating the operation was tuberculous caries of the symphysis itself; in the others it was carcinoma of the bladder and great enlargement of the middle lobe of the prostate. He makes a transverse incision and pushes back the soft parts; after reaching the bone he divides it on either side, perpendicularly, to the necessary depth with a broad sharp chisel, and then placing the chisel horizontally at the required level, and beginning at one of the perpendicular lines, he divides the symphysis from before backwards, carrying the chisel from each end of the exposed line to the centre. In the case of carcinoma, free access was obtained to the tumor which was in the upper aspect of the posterior wall. The tumor was removed and the healthy tissue on both sides. The bladder wound was sutured with catgut. There was considerable stranguary for a few days, but it gradually diminished and healing was complete in three weeks. The case of prostatic enlargement died in eight days after operation, but the case was an unfavorable one. The operation is an easy one, and is suitable for cases of large malignant tumors, some forms of prostatic hypertrophy, excessively large stones and encysted stones, rupture of the bladder, etc.

Dr. P. Niehans of Berne (*Centralblatt f. Chirurgie*, No. 29, 1888) describes a new operation for exposing the bladder somewhat similar to that of Helferich. He makes a vertical incision through the soft parts in the linea alba till the root of the penis is reached, and then the incision is directed to the part in which it is intended to remove the bone, reaching down in the direction of the rami of the pubis and ischium; the soft tissues are pulled aside, the periosteum carefully elevated, the ascending ramus of the ischium is divided with a chisel, then a small incision is made in the horizontal ramus of the pubic bone immediately to the inner side of the crural vein, and the attached pectineus and periosteum removed; then the ramus is carefully divided with a chisel, the symphysis is divided with a knife or chisel, and after separating the soft parts the piece of bone is turned down and the bladder is exposed to view. Several excellent illustrations explain the method of operating. Dr. Niehans has only

operated on one case so far—a woman, aged 38, with a fœcal fistula over Poupart's ligament. There was also fæces and pus in the urine. The patient was much reduced. The osteoplastic operation above described was performed; a fistulous opening into the bladder large enough to admit a finger and a tuberculous ulceration were found. The opening was excised and sutured, the bone replaced and fixed in position by catgut sutures through the symphysis. The patient recovered well from the operation, and although the replaced bone gave way, and had to be kept in place by a girdle, and fæces still came through the wound, the patient remained in good condition. The author states that the further course of the case is yet to be reported, but the fact is proved that the operation is feasible, easy of performance, and without danger.

Statistics of Operations on the Gall-bladder.—Dr. A. Depage, in the course of a paper on surgical intervention in biliary lithiasis (*Jour de Med. Brux.*, 1888, No. 24), says that up to the present time there have been 78 cholecystotomies performed. Of these, 6 were done according to the method of Spencer Wells and 72 with suture of the gall-bladder to the abdominal wall. Of the first named series, 3 died from acute peritonitis, 1 cured case was followed by recurrence, and 2 cases were completely cured. In the second series there were 11 deaths, 5 from hemorrhage and collapse, 2 from biliary retention, 2 from effusion of bile into the peritoneum, and 2 from undetermined cause; there were also 4 deaths from secondary complications. Amongst the cures were 24 cases of biliary fistula, some permanent. The number of cholecystectomies has been 22, with 2 deaths from obstruction of the bile ducts and 1 after recovery from the operation from causes independent of the biliary lithiasis. Thus in cholecystotomy with suture of the gall-bladder and its return free into the abdominal cavity a mortality of 50 per cent. resulted; in cholecystotomy with suture of the bladder to the parietes 15.27 per cent.; and in cholecystectomy 9.99 per cent. And as the last-named figure comprises two cases of permanent occlusion of the common bile duct, the result, if they be excluded, is greatly to enhance the position of cholecystectomy as an operation to be preferred to cholecystotomy.—(Quoted in *Lancet*, Jan. 12, 1889.)

A Contribution to the Surgery of the Spine.—Dr. Robt. Abbé (*New York Medical Record*, Feb. 9th, 1889) reports two cases of operation upon the spine. The first is a case of *extra-dural tumor of the spine*, with complete paraplegia. Patient, aged 22, was in perfect health up to January of last year, when pain in the back first appeared. In March there was some fullness and tenderness on pressure in the soft parts to the right of the ninth and tenth dorsal spines. Four weeks later swelling of the soft parts had markedly increased, and tactile sensibility began to be disturbed in both legs, then there was failure of muscular power. Two weeks later he could not stand without support, then power in the legs rapidly disappeared. The spine became rigid and painful, the abdomen tender and hyperæsthetic, and the legs absolutely anæsthetic. By May 25th the condition had become serious. There was considerable hectic fever and the patient lay in an apathetic condition, suffering from the slightest motion of the spine and with girdle and intercostal pains unabated, so operation was decided upon. An incision was made six inches long close to the spines, from sixth to twelfth dorsal. The laminæ being uncovered, some thick broken-down tissue and pus were scraped away; the laminæ were already bare of periosteum, and the spines and laminæ of the eighth, ninth and tenth were cut away by forceps. This revealed a dense mass of tissue and desiccated pus occupying the entire calibre of the canal, and extending up and down in all two and a half inches. This compressed the cord firmly against the anterior wall. It was thoroughly and rapidly removed by a sharp Volkmann's spoon until sound bleeding tissue was left on every side. The cord was not seen to pulsate. The cavity was packed with iodoform gauze, and an antiseptic dressing and plaster-of-Paris bandage applied. On the eighth day sensation began to return. In the fourth week he began to move his left leg and toes of his right. In four weeks he moved both legs well. In four and a half weeks he walked pushing a chair. When the patient was exhibited to the Surgical Society of New York eight months after operation he was stout and healthy, and walked well. The tumor was examined for tubercle bacilli, but none found.

The second case was that of a man aged 24, who was suffering from a most intractable brachial neuralgia. The nerves were stretched, then the arm was amputated, without benefit, so finally the roots of the 6th, 7th and 8th cervical nerves were divided, with improvement in the symptoms. At first the nerve roots were cut outside the dura mater, but the day after operation, no relief being experienced, the patient was again operated on; the dura mater was slit up and explored, and the posterior roots of the 6th, 7th and 8th nerves were cut inside the dura mater. The dura mater was sutured, and the wound, which had at the first operation been packed with iodoform gauze, was now closed with sutures and united by first intention. He was much improved by the last operation, could walk steadily, and had less pain.

Removal of a Spoon from the Peritoneal Cavity.—This remarkable case has been of late exciting some interest in Paris. M. Le Dentu brought it before the meeting of the Academy of Medicine on January 8th. The patient, a young man aged 21, swallowed, unintentionally, a wooden spoon about twelve inches long; after swallowing it he dined as usual, and went to bed feeling perfectly well. About two in the morning he suffered severe pains and a sense of tearing in the region of the stomach. He went to hospital, and the house surgeons felt distinctly the foreign body above the umbilicus. Next day Le Dentu performed gastrotomy. On opening the stomach and introducing his finger no foreign body was found; the abdominal cavity was then searched and the spoon was found standing upright in the pelvis, one of its ends being in contact with the bladder. The spoon was removed and the man made an excellent recovery. The most careful examination could not detect the part of the stomach through which the spoon had passed.

Pneumotomy for Pulmonary Abscess.—In the *Vratch*, No. 38, 1888, p. 143, Prof. F. N. Opensovsky of Dorpat relates a strikingly successful case of pneumotomy for an enormous abscess of the right lung, with gangrene, in a man aged 30. The patient had enjoyed excellent health up to the middle of April, 1886, when, in consequence of exposure, he caught severe pleuro-

pneumonia, which ended in suppuration. Three weeks after the onset of the illness he expectorated a tumblerful of offensive pus. The suppuration steadily progressed, being accompanied by violent cough, hectic fever, and emaciation. About the middle of September signs of pulmonary gangrene appeared. Prof. W. Koch performed pneumotomy on Sept. 19th. Two pieces of the 5th and 7th ribs were excised between the anterior and posterior axillary lines. The pleura having been found firmly adherent, a thermo-cautery was plunged into the pulmonary tissue, striking the abscess cavity at a depth of two to three centimetres; this was followed by cough and the expulsion of a large amount of foetid pus. The cavity was large enough to allow Prof. Opensovsky to introduce his whole hand freely and move it about searching for the bronchial opening. Having removed several pieces of sloughing tissue, the operator enlarged the bronchus with the thermo-cautery and then freely cauterized the whole gangrenous focus, afterwards washing the cavity out with a weak solution of permanganate of potash. A drainage-tube was inserted and dressings applied. Irrigations were repeated twice daily for the first ten days, and afterwards once a day; the drainage-tube was removed Oct. 26th. On Dec. 8th patient was discharged well. A year after the man was perfectly well, and no fistula remained. He was gaining his living as a hospital porter.

The Application of Extension in Potts' Disease and Vertebral Injuries.—Dr. H. C. Wood recently, at the University Hospital of Philadelphia, showed and explained a method of treatment applicable to cases of Potts' disease and fractures of the spinal column which he believed to be novel. (*Medical News*, Jan. 19th, 1889.) After speaking of Prof. J. K. Mitchell's treatment of these cases many years ago by swinging from the head, and alluding to the treatment by the plaster jacket, Dr. Wood said that it had occurred to him that the spinal jacket might be used for purposes of extension. The chest of a well-shaped man is an inverted cone, and any upward strain upon the jacket would be received, not upon any one point, but upon numerous points on the surfaces of the wall. He therefore had

a jacket made with loops from which the patient could be suspended. The making of the loops is very simple ; after the first layer of the jacket is put on, a strong linen bandage is placed at the lateral lower edge anteriorly, and then carried directly up, loosely, over the shoulders and down again to a similar position on the posterior edge of the jacket. The bandage is then reversed and carried upward and forward, and returned until three or four turns of the bandage are loose over the shoulders ; the same is done on the other side, and then the exterior layers of the jacket are put around the two bandages up to the top of the jacket. When the jacket is dry, the loops are so thoroughly incorporated with the jacket that they cannot be removed without destroying the jacket, and they afford a means of extension. Cases of Potts' disease are advised to be daily suspended for three or four hours, wholly or partially as the case requires. This method is also suggested in the treatment of fractures of the spine, not only could the patient be suspended for hours, but by securing the loops to the head of the bed and raising the latter at an angle the weight of the body could be used for purposes of extension even during sleep.

On the Removal by Operation of Naso-Pharyngeal Tumors.
 —Mr. Annandale has an interesting paper on the removal of naso-pharyngeal tumors in the *Lancet* of January 26th, 1889. The successful removal of these tumors has always been a matter of great difficulty, and many operations have been devised. The method introduced by Mr. Annandale, although not altogether original, is new in many respects, and as performed by Mr. Annandale in the very skillful manner which I witnessed in Philadelphia last September is a very brilliant operation. His method of operation is as follows: (1) The exposure of the anterior nares by freely dividing the mucous membrane connecting the upper lip and upper jaws according to the plan of Rougé. (2) The division of the bony septum of the nose along its attachment to the jaw. (3) Incising the soft parts along the middle line of the hard palate, and then sawing through the alveolar margin of the upper jaw and through the entire hard-palate along the same line. The soft-palate may or may not require

division in its middle line. The necessity for this depends upon the size and attachments of the growth. (4) The forcible separation of the two jaws and the introduction through the gap of the finger, periosteal scraper, or other similar instrument with the view of separating the secondary connections of the growth to the surrounding parts. (5) The removal of the growth from its primary site and origin by forceps, sharp spoon, cold snare, or galvanic wire. In all the author's own cases he used strong forceps, assisted by a periosteal elevator and sharp spoon. (6) When the tumor has been removed, the introduction of some form of antiseptic plug, such as a plug of lint soaked in carbolic acid and well dusted with iodoform. (7) The jaws are now brought together again and secured by one wire suture through the alveolar margin of the bone and two or more horse-hair sutures through the soft parts of the palate wound.

The advantages of this operation are the absence of resulting deformity and the freedom from hemorrhage.

Three successful cases are narrated, two in young men and one in a boy aged 14. In the case performed at Jefferson Hospital, in Philadelphia, preliminary tracheotomy had to be performed as the patient was unable to respire properly whilst lying on his back. In cases where the growth is very extensive, excision of one or both upper jaws is recommended.

Treatment of Intussusception of the large Bowel by Abdominal Section.—Mr. Arthur Barker (*Lancet*, August 4th, 1888) reports a case of intussusception successfully treated by abdominal section. The patient was a child aged four years, admitted into University Hospital August 25th, 1887. He had been in good health up to the day before admission, and his bowels had been opened at 10 A.M. About three o'clock next morning the child awoke and complained of great pain in the abdomen. He passed a stool which was loose, but there was no relief of pain; then he passed, a little later, about a wine-glassful of blood, and half an hour later some more. He was seen by Mr. Barker at 2 P.M. A tumor could be felt in left iliac fossa, and the finger in the rectum reached nothing abnormal, but returned covered with blood. The rectum and colon were then distended with water

to as large an extent as appeared safe, and this seemed to get rid of the tumor. At 7 P.M., great pain still continued, blood still was passed, and the tumor had returned. Operation was at once decided on. The intussusception was found without difficulty in the left hypochondrium. The abdominal incision was enlarged and the intussusception reduced. The bowel was much congested, and marked by submucous hemorrhages. The portion of the bowel involved in the tumor consisted of the cæcum, ascending and transverse colon. The patient made an uninterrupted recovery, and was discharged on September 16th. Appended to this paper is a table of 73 cases treated by laparotomy. In 34 of these the bowel was released; 12 recovered, 22 died, and 9 cases were found to be irreducible. In 5 the abdomen was closed without doing anything, and all died. The intussusception was resected in 14 cases, and only 1 (an adult) recovered. In 10 cases an artificial anus was made, and all died. In 10 cases an artificial anus was made without laparotomy, and all died; so that of these 73 cases only 13 recovered.

In the Hospital Mirror of *Lancet* for January 26th, 1889, Dr. Cheadle reports a case of intussusception in a child aged 14 months treated successfully by inflation of air by means of an ordinary Higginson's syringe. The patient was first placed under chloroform; on examination, a well-defined, sausage-shaped tumor could be felt on the left side of the abdomen, extending from the hypochondrium to the iliac fossa. Air was inflated until the abdomen became tolerably tense; after waiting a minute or so the air was allowed to escape. After the third inflation no tumor could be felt in any part of the abdomen. In a week the patient was perfectly well. Dr. Cheadle states that this is the fifth case of intussusception successfully treated by inflation at the Children's Hospital. Four cases are reported in the *Lancet* of October 1886 and February 1888.

Mr. Carver (*Lancet*, Jan. 26th, 1889) reports a case of intussusception in a child aged 2 years and 5 months successfully treated at the Addenbrooke Hospital, Cambridge, by abdominal section. The affection had been of seven weeks' duration. The bowel protruded at the anus. The abdomen was opened and

reduction effected without any great difficulty. There was no evidence of general peritonitis.

Surgery of the Intestines.—The literature on this subject still continues to accumulate. I have space only to refer the reader interested in this subject to the following articles:—

(1) An excellent paper on "Perforation of the Vermiform Appendix in its relation with Attacks of Perityphlitis," by John A. Macdougall of Glasgow, *Lancet*, Sept. 22nd and 29th, '88.

(2) "Clinical Lecture on Typhlitis, its Nature and Treatment," by Sir Dyce Duckworth, in *Lancet*, Oct. 6th, 1888.

(3) A paper by Dr. Wm. T. Bull of New York, read before the Medical Society of London, on "The Surgical Management of Typhlitis and Perityphlitis," *Lancet*, Nov. 10th, 1888.

(4) "Special Diagnosis in Acute Perforative Peritonitis," by Dr. H. W. G. Mackenzie, *Lancet*, Dec. 1st and 8th, 1888.

(5) "Perityphlitis," editorial in *New York Medical Journal*, Jan. 5th, 1889.

(6) "Relapsing Typhlitis healed by Operation," by F. Treves, *Lancet*, Feb. 18th, 1888.

(7) "Notes of a case of Abscess in the Groin containing a Vermiform Appendix," by W. D. Spanton, *Brit. Med. Journal*, Jan. 19th, 1889.

(8) "A case of Perforation of the Vermiform Appendix, General Peritonitis, Laparotomy, Accident, and Recovery," by Dr. A. M. Jacobus, *New York Medical Record*, Feb. 2, 1889.

(9) "The Surgical Treatment of Perforating Ulceration of the Stomach and Intestine," by Dr. Steinthal, in *Beilage zum Centralblatt f. Chirurgie*, No. 24, 1888, quoted in *Annals of Surgery*, p. 61, Jan. 1889.

(10) "Three cases of Intestinal Obstruction due to Meckel's Diverticulum," by Dr. G. Gibson Hamilton, *Lancet*, October 6th, 1888.

(11) "Abdominal Section for Acute Intestinal Obstruction, with Recovery," by Mr. Edmund Owen, *Lancet*, Oct. 20, 1888, pp. 765 and 771.

(12) "Two cases of Suppurative Peritonitis treated by Laparotomy, Iodoform Gauze, and Capillary Siphon Drainage," by Mr. C. B. Keetley, *Lancet*, Nov. 24, 1888, p. 1021.

(13) "Three cases of Excision of the Ileo-cæcal Valve for Carcinoma," by Kuester of Berlin. Report of meeting of Berlin Medical Society, Nov. 21, 1888, in *La Semaine Médicale*, Nov. 28, 1888.

(14) "On the Treatment of so-called Perityphilitic Abscesses," by Dr. R. F. Weir. Paper read before the Medical Society of the State of New York, and reported in *New York Medical Journal*, Feb. 16, 1889.

Very Hot Compresses in Surgical Practice.—Prof. J. J. Nasiloff, writing in *Vratch*, gives an account of several cases of inflammation of the lymphatic glands which he treated with marked success by means of very hot compresses. These compresses consisted of a four-fold piece of linen, rather larger than the surface of the affected glands. This was dipped into water at a temperature nearly or quite equal to 212°F., wrung out, and applied quickly over the glands, its own temperature then being 140° to 160°F. These applications were made morning and evening, the compress being allowed to remain on, covered over with cotton wool, for about fifteen minutes. The application produced somewhat severe pain, but this did not last long, though sometimes a blister was caused. The treatment was continued about a fortnight. It was found that it very soon began to promote absorption; this action was always accompanied by a rise of temperature, depending apparently upon the size of the diseased glands and upon the extent of the absorption that was taking place. It was noticed that the earlier the treatment was adopted the more effective it was. Professor Nasiloff believes that hot compresses are a valuable form of treatment, not only in strumous glands, but in rheumatic osteo-myelitis, and in fungoid inflammation of the joints.—(*Lancet*, Dec. 1, 1888.)

Lateral Anastomosis of the Intestines by Senn's Bone Plates. Catgut rings recommended as a substitute.—In addition to the four cases already reported by Senn, Dr. Robert Abbe (*New York Medical Journal*, March 23rd, 1889) reports another, in which complete obstruction of the colon was successfully relieved by using bone plates. The case was one of carcinomatous obstruction in a man aged 60, in which, under cocaine anæsthesia, the abdomen was opened and the colon found greatly distended. A temporary artificial anus was established, giving escape to a large amount of fæces. Six weeks later an operation was performed to overcome the obstruction caused by the cancerous stricture. This was done very rapidly by the use of Senn's plates. Dr. Abbe says that the bone plates one can secure from the makers seem to be limited in size, so that an aperture between two intestines of an inch and a half is about the largest obtainable. The plates take many days to prepare, and the larger ones do not preserve their shape as well as the smaller ones. The preparation of decalcified bone plates involves two or three days' maceration in dilute ten per cent. of hydrochloric acid, then washing half a day, and compressing between blotting pads, with flat pieces of tin on either side, until quite dry. They warp if not tightly compressed. An oval opening has then to be cut or drilled in the plate, as well as openings for the threads. Finally, the threads have to be secured and connected each with the other by a method not easy to carry out. Dr. Abbe thinks that an effective substitute for the plates will be welcome, and suggests rings of the heaviest catgut softened in water until it ceases to twist upon itself. It is then formed in a ring of four strands on the ends of three fingers, and wound over and over with the same sized gut tightly applied. When completed the ring is stiff and flat, with no disposition to curl. The threads are quickly and simply adjusted around the ring, and insure its making a firm pressure until it has dissolved in the bowel. Such

a ring will need six threads attached to it in place of four, as in Senn's plates. Each thread should be armed with its own needle. Dr. Abbe has used this catgut ring on a large dog; nine days later the dog was killed, the anastomosis between the two parts of bowel was found to be completely established, and the rings had dissolved away. Since then, Abbe carried out his suggestion in a case of fæcal fistula (editorial *Medical News*, April 13, 1889), and the rings were used efficiently. In addition to the threads, Lembert's sutures should be used in the interspaces between the threads. Abbe also suggests that the gut should not be laid side by side with the ends together, but with ends looking opposite ways, then the peristalsis would be in the same direction for both parts. Senn has shown that the cementing of the apposed serous surfaces by plastic exudation during the first five or six hours is sufficient to hold the parts together, but in forty-eight hours union is so firm that severe internal pressure will not part the wound.

At a meeting of the Medico-Chirurgical Society of London, held March 12th, 1889, Mr. F. B. Jessett communicated a paper on the results obtained from an experimental investigation into a novel mode of operating on the intestines (*Lancet*, March 16, 1889) which strikingly confirms the value of lateral anastomosis. The operations were performed on dogs, and consisted of (1) gastro-enterostomy, jejunio-enterostomy; (2) circular enterorrhaphy; (3) ileo-colostomy. Bone plates and India-rubber rings were used. The latter were used in the following way. The portion of intestine being removed, a narrow band of India-rubber was cut the exact size of the circumference of the upper portion of the divided gut; this was formed into a ring by two catgut sutures. This ring was next pushed into the gut and fastened around its free edge by a continuous catgut suture. Two threads armed at either end with a common sewing needle were prepared. One thread passed through the upper end of the India-rubber ring, now fixed in the intestine, and all the coats of the bowel, the needles being passed one on each side of the mesentery. The needles of the other thread were passed equi-distant through the rubber ring and coats of the intestines on the convex surface.

The needles were next passed through the serous and muscular coats of the lower portion of the bowel about one-eighth of an inch from its cut edge at corresponding points; these threads were drawn tightly and the upper portion of the intestine invaginated into the lower, so that the two peritoneal surfaces were in close contact, and the threads were tied sufficiently tight to prevent disinvagination. The bowel was then dropped into the abdomen and the wound closed. The operation as at present practised with the Czerny-Lembert method showed a mortality of 86.6 per cent. as against 24.99 per cent. in those cases of enterorrhaphy performed by Senn's method of invagination, or 7.69 per cent. of those performed by means of approximation discs. The advantages claimed were simplicity, expedition and better results, only four to six sutures were used instead of fifty to sixty by the Czerny-Lembert method, and twenty minutes would complete the operation as against one hour and a half by the old method.

In a letter to the *Medical News*, May 4th, 1889, Dr. M. E. Connell states that a good and easily obtained substitute for Senn's plates is found in the cartilage of the scapula of a young steer. The material may be carved in segments and cut to any size, and has proved successful in dogs which have been operated on.

On a Method of Operating so as to Lessen the Dangers of Exsection of Intestines.—Dr. E. Hahn (*Berlin. Klin. Woch.*, June 25th, 1888) advocates a new method of resection of the intestines and suture of divided ends in cases of strangulated hernia with gangrenous intestine. The peritoneal opening, after the relief of strangulation, is enlarged and the intestine drawn down and ligatured above and below the gangrenous part and resected. The cut ends are thoroughly disinfected and stuffed up to the ligature with iodoform gauze, which is kept in place by a stitch. The ends of this stitch are left long, so that when grasped by forceps passed through the mesial abdominal wound they may serve to pull the ends of the intestines through. An incision six to eight cm. long is next to be made in the linea alba, extending from just below the umbilicus to the level of a line

joining the two anterior superior spines. The centre of this incision will be nearly opposite the point where the mesentery crossed from left to right. The surgeon, after carefully protecting the divided intestinal ends from further contamination by inserting gauze into the original intestinal wound, now passes a pair of forceps from the mesial to the groin wound, and draws them through by the threads left for the purpose. Afterwards he packs the groin wound with gauze and then proceeds to suture the intestine. The mucous membrane is treated with continuous sutures, the peritoneum with Lembert's suture. After the sutured intestine has been again bathed with lotion (two to three per cent. of acid carbolic preferred), it is returned into the abdominal cavity, but to prevent risk of escape of fæcal matter, and to keep the sutured part in position, strips of iodoform gauze are packed around on each side as far as the mesentery. The ends of the strips are left to project at the wound. The sutured part of intestine is thus kept at the level of the parietal peritoneum, opposite the wound, and may be inspected at will by removing an extra piece of gauze which is laid over it. To keep the gauze in place, and to prevent prolapse of intestine from cough, two or three superficial stitches are inserted and knotted over the gauze.—(*Annals of Surgery*, May 1889.)

The Radical Cure of Inguinal Hernia.—Dr. Chas. McBurney on February 21st, 1889, read a paper on the above subject, in which he advocated treatment by open incision (*New York Medical Record* and *New York Medical Journal*, March 23rd, 1889). After reviewing the various methods of treating inguinal hernia by operation, he described the operation practised by himself. He began his operation by making a free incision from a point on the abdomen above the internal ring downward and inward, so as to lay open the whole canal. The spermatic cord was separated and the sac dissected out to its very point of origin. It was then opened, any contained intestine reduced, and any pieces of omentum tied off. The sac was now held up and the finger inserted to prevent the descent of the intestines; it was then tied off close to the internal ring. The conjoined tendon was then brought down, as in Macewen's operation.

Then he proceeded to make an open wound by turning in the integument and suturing it to the superficial layers of muscle ; he also passed several deep tension sutures. The wound was then packed with iodoform gauze and a suitable dressing applied. The urine was withdrawn by a catheter for a few days to avoid soiling the dressings, and in the case of children a plaster of-Paris dressing was used to give additional security, with a coat of shellac added in female children. The supine position was to be maintained during the five or six weeks necessary for healing to become complete, but it was time well spent, for the scar would thus be stronger and the patient got up finally free from the "slavery of a truss." He said that he could safely say of his method that it was the only one which really secured an obliteration of the sac, a union of the walls of the canal throughout its length, and a minimum risk of abscess or infection. It was applicable to every variety of hernia, and cure was effected rapidly. In thirty-six operations of every sort in which he had used this method he had had one death, and that from alcoholic delirium. There had been one relapse. Two patients had passed out of sight and three were still under observation in hospital, but there was every reason to believe the remainder were permanently cured.

In the discussion which followed the reading of the paper, Drs. L. A. Stimson and R. Abbe strongly recommended the operation. Dr. Abbe said he had operated for hernia 117 times, 52 times by Macewen's method, and he preferred McBurney's operation, because it was simple and required no special skill.

Its simplicity is certainly a great recommendation ; besides, it is an operation which will lessen greatly the danger of septic infection. The time taken is rather advantageous than otherwise, and in an operation by any method it is important to keep the patient in bed six or eight weeks to consolidate the new tissue.

Excision of Bone to promote Healing of Soft Parts.—At a meeting of the Medical Society of London, held Feb. 11th, 1889, Prof. Annandale of Edinburgh (*Lancet*, Feb. 16th, '89) read a paper on excision of bone in order to promote the healing of certain ulcers or wounds or to relieve contraction resulting in

connection with this process. He remarked that the proceeding was not new, and that his first experience of it was in the practice of the late Mr. Syme, more than twenty-five years ago, since which time he had himself operated on several cases. He considered the subject under the following four heads: (1) The removal of a portion of bone not including its entire thickness. (2) The excision of a portion of the entire thickness of a bone or of two bones (as in leg and forearm). (3) The partial or complete excision of a joint when the sore or contracture involved the soft parts in its neighborhood. (4) The excision of a portion of the entire thickness of one or other of the bones of the forearm or leg in order to allow the proper approximation of the ends of its companion bone which had suffered some loss of substance. Illustrative cases were detailed; one of the most interesting of these was one in which Mr. Annandale had removed two inches and a half of the shafts of the tibia and fibula in order to promote contraction and healing of a large sore on the leg. The case was perfectly successful. In conclusion he stated that as a primary operation in cases of injury this procedure was not likely to be useful except in rare cases, as it was impossible in the first instance to be certain of the exact amount of the loss of the soft parts, and he expressed a hope that the experience of the operation referred to would encourage surgeons to make use of the principle in suitable cases.

Mishaps from the Use of the Aspirator.—Accidents following the use of the aspirating needle are not common, still cases do occur and sometimes result fatally. Dr. J. M. Ball (*New York Medical Record*, March 9th, 1889) relates a case in which "the needle of an aspirator was plunged past the right pleural cavity, through the diaphragm, and into the liver, with fatal result." The case came before the courts, and at a second trial the doctor was fined fifty dollars damages. The patient was a strong, robust and healthy man of 38 years, a farmer. He contracted a severe cold. When the doctor was called in he found marked dulness over the right side of the chest, extending downward from about one inch above the nipple. The chest was aspirated in the right axillary line, between the sixth and seventh ribs.

The needle was first introduced about an inch, and then finding no fluid, it was plunged deeper. The aspiration was performed on Thursday, and immediately after the breathing became rapid and difficult, and there was great pain in the right hypochondriac region; in twenty-four hours patient was delirious and his abdomen tympanitic and swollen; on the following Tuesday he died. The post-mortem showed that the thoracic organs were healthy, except the lower lobe of the right lung, which was the seat of hepatization. The abdomen showed evidences of acute general peritonitis. The superior surface of the liver presented a wound about one and one-eighth of an inch in length and varying from one-eighth to three-tenths of an inch in depth. Between the superior surface of the liver and the under surface of the diaphragm, and adherent by plastic exudation to the latter, were several flattened clots of blood each about the size of a half dollar. The diaphragm, at a point corresponding to the wound in the liver, presented evidences of an intense inflammation. The length of the needle used was $3\frac{1}{8}$ inches.

This is a remarkable case, and one which is very instructive. The abdomen and liver itself is not infrequently explored by the aspirating needle without any ill results following. In this case there was slight hemorrhage no doubt, and the upper surface of the liver was wounded, but it seems to me that if the needle had been perfectly aseptic a fatal result would not have ensued. This is a point which, however, was not touched upon in the trial—several questions were asked the experts about the parts that could be wounded by a needle passed through the sixth or seventh spaces on the right side.

In the *Lancet* of Feb. 2nd and 9th, 1889, a case is reported where general subcutaneous emphysema followed aspiration of the chest. The case occurred in the Victoria Hospital for Children, and was under the care of Dr. Evans. The patient was a child aged eighteen months, and had been under treatment for broncho-pneumonia. The lungs had cleared, except at the right base, where there was persistent dulness with tubular breathing. Thinking that perhaps there was a localized empyema, a full-sized aspirating needle was introduced just below the angle

of the scapula, but no fluid was obtained. The needle was withdrawn and the puncture closed with wool and collodion. Two hours later there was subcutaneous emphysema extending from the seat of puncture, over the trunk, and up the right side of the face; in six to eight hours the swelling had involved the whole trunk and scrotum and formed a prominent collar around the neck, the eyelids were puffy, and the right eye closed. After twenty-four hours the swelling began to subside, but it was nearly a fortnight before all the swelling had disappeared. For the first three days the temperature was as high as 102° . The child died some time after of diphtheria, and at the site of the puncture the pleural sac was obliterated. The lung was firmly adherent to the chest wall, and contained a number of dilated bronchi. The needle had probably entered one of these dilated tubes.

Excision of Dislocated Semilunar Cartilage.—At a meeting of the Clinical Society of London, held on the 25th of January, 1889 (*Lancet*, Feb. 2, 1889), Mr. H. W. Allingham read a case of removal from the knee joint of a dislocated internal semilunar cartilage. The patient was a youth aged 20, and the injury was caused by violence whilst playing football in October, 1887. The knee at the time became swollen. He could not use his knee freely on account of the pain; every exceptional exertion produced the sensation of his leg being broken at the knee. Soon every slight stumble caused pain. In Sept. 1888 Mr. Allingham saw him and found on the inner side of the knee, in the interval between the tibia and femur, a hard, fairly movable body about an inch and a half in length. The knee-joint was opened on the inner side by an antero-posterior incision two inches in length. The movable body proved to be the internal semilunar cartilage torn away from its anterior attachment. He could not pull it out because it was firmly attached posteriorly, so a pair of scissors was introduced into the joint and the cartilage was cut off as close as possible. The wound was then sutured, great care being taken to bring together the synovial edges. The patient made a complete recovery, and a few months afterwards could move his joint freely in every direction; he could walk and run as if nothing had happened to the joint.

Mr. Thomas Annandale (*British Medical Journal*, Feb. 9th, 1889) also reports a case of *Excision of the Internal Semilunar Cartilage, resulting in perfect restoration of the joint movements*. He says that further experience of cases of dislocated semilunar cartilage has confirmed his opinion that no mechanical appliances will cure cases in which the semilunar cartilages are much separated from their attachments or otherwise injured. The case is as follows: A strong, healthy miner was first seen at the Royal Infirmary on July 11th, 1888. Eleven months previously a mass of coal fell on his leg and knocked him down. In his struggles to get up he gave his knee a severe twist, and it was with some difficulty that he got home. The joint swelled and was stiff for some days. After returning to work he found that the movements of the joint were uncertain, and that sometimes it would suddenly become "locked." He felt something moving in his joint, and when the knee became fixed it required some little manipulation to restore its movements. An external examination did not detect any unnatural condition except there was slight effusion into its cavity. On the 18th of July Mr. Annandale exposed the affected cartilage and freely opened the joint, when the injured cartilage came into view; the greater part of the cartilage was removed; the wound was closed, no drainage being employed, and the patient made a perfect recovery. He was last seen in December, when it was found that the joint movements were perfectly natural, and he could successfully carry on his employment. Mr. Annandale has already frequently operated on displaced cartilages successfully by bringing them into proper position and securing them there with cat-gut sutures. His first operation was performed as far back as November 1883.

Insanity following Surgical Operations.—Mr. C. T. Dent has an interesting article on the above subject (*Jour. of Mental Science*, April 1889). He says that in three ways a surgical operation may produce physical disturbance (1) by anticipation, (2) by the actual operation, and (3) by the after effects. A more important factor still in producing physical disturbance is mental reaction. The importance of this factor is usually under-

rated. Mr. Dent speaks of the various degrees of mental disturbance occurring in the following order. Emotional disturbance, hysterical disturbance, loss of control, unreasonableness, delusions and hallucinations, and mania in its various forms. Mr. Dent is not inclined to agree with Dr. Savage that many of those cases of insanity following operation are due to the effect of the anæsthetic, but says that the shock of an operation may act like any other shock and give rise to insanity in a person of mental instability. In the majority of cases, however, which he has seen or collected there was no history of mental instability either natural or inherited. And he calls attention to the class of cases in which, after the operation, the mind reverts to its normal condition, but subsequently, after a greater or less lapse of time, symptoms of mental disorder begin. Four cases occurring in the author's practice are detailed, one of which ended fatally—a case of ovariectomy. In only one was iodoform used, and in all the insanity came on some time after the operation. Mr. Dent says the anæsthetic factor cannot be altogether excluded, and that when the mental disturbance is the direct and immediate sequel of the anæsthesia, it is probably due to the anæsthetic. (Why not to the shock of the operation?) He also states that when acute mania occurs shortly after a serious operation the prognosis is always grave, even though the wound be going on well. The more chronic the mania the better the prognosis as far as life is concerned. If the wounds do badly the mania is apt to become chronic; if they do well, the prognosis will be favorable. The author's own impression is that cases of mania after operations are not nearly so infrequent as is commonly supposed, and that many of these cases are set down as delirium tremens, or due to septic conditions.

Dr. Savage (*British Medical Journal*, Dec. 3, 1887) reports a number of cases of insanity following the use of anæsthetics in operations and otherwise, and in most of the cases reported by him there was a distinct family history of insanity.

The writer has reported (*American Journal of the Medical Sciences*, Dec. 1888) six cases of mania following operations, two of which resulted fatally and one never recovered complete

sanity. In all the cases acute mania rapidly followed the operation. In two there was a distinct history of insanity, one was an epileptic, and one a confirmed drunkard. In this paper the writer says that "in persons who have a strong predisposition to insanity, or who have suffered from previous attacks, the surgeon should consider whether it is advisable to operate on such individuals when the operation is of no great urgency and is not essential to the prolongation of the patient's life."

Cases of insanity, melancholia, etc., are reported from time to time following operation on the genital tract, and quite recently Dr. Thomas of New York (*Philadelphia Medical News*, April 13th, 1889) has drawn attention to the comparative frequency of their recurrence. He includes in his cases mania following excision of the breast for carcinoma or tumor. Six cases are reported, four of which died—viz., one ovariectomy, one perineorrhaphy, one laceration of cervix, and one excision of breast.

There is no reason to believe that mania follows more frequently gynecological than other operations in surgery, and it is most important, in all operations on the genital tract and elsewhere, to consider carefully not only the family history but the mental condition of the patient. In one case operated on lately by the writer, no anæsthetic was given because the patient had been insane on several occasions, and once after the administration of ether for examination purposes. The operation (removal of a sublingual dermoid cyst) was performed without anæsthesia, and there was a rapid and complete recovery without any mental disturbance whatever. In this case an anæsthetic, I have no doubt, would have precipitated an attack of insanity. I cannot agree with Mr. Dent in attributing these cases of mania immediately following the operation to the anæsthetic, for why should not the shock of the operation act as rapidly, and are not cases on record of insanity immediately following an injury when no anæsthetic was given. The subject is full of interest, and it is only now that surgeons are awakening to its importance. No doubt in a short time sufficient data will be available to formulate some definite conclusions.

Rupture of the Quadriceps Extensor Tendon.—Dr. W. T. Bull (*New York Medical Journal*, April 20th, 1889) reports a case of the above successfully treated by suture of the separated ends. (This case was presented at the meeting of the New York Surgical Society, Feb. 27th, 1889.) A table of twenty cases is given where this accident was treated by plaster-of-Paris bandages or posterior splint, and also four cases treated by suture. In these latter the result was excellent. He suggests that in case of rupture, where the separation between the ends of the tendon is trifling—say to the width of an inch or a finger's-breadth—as well as in those where there is no effusion into the joint, the treatment should be by posterior splint or plaster-of-Paris bandage after drawing down the muscle and fixing it by bandaging from above downwards. The patient may begin to walk at the end of four weeks. Where, however, the ends of the tendon are widely separated, say two finger-breadths, or where the joint capsule is distended, the suture should be resorted to at once.

Inguinal vs. Lumbar Colotomy.—At a meeting of the Harveian Society of London, held March 28th, 1889 (*Lancet* and *British Medical Journal*, May 4th, 1889), Mr. Harrison Cripps, after giving an account of the history of colotomy, and drawing attention to the improvements in detail introduced by Mr. Bryant and Mr. Davis-Colley to the lumbar operation, further called attention to the work of Messrs. Reeves, Lawson Tait, Chavasse and Allingham in re-introducing the inguinal or intra-abdominal method of opening the bowel. He recorded 37 consecutive cases, 15 of lumbar and 22 of inguinal colotomy, nearly all the cases being undertaken for malignant disease. There was but a single death in each series of cases, thus the mortality was a little over five per cent. He considered inguinal a vastly superior operation to lumbar colotomy. There were certain grave objections to the lumbar operation; amongst these were the depth of the bowel in a fat subject and the very limited space in which the surgeon had to work. Then, again, there was often difficulty in recognizing the colon, so that numerous mistakes had been made in opening the small intestines and even the stomach. The

gravest objection, however, was that occasionally the course of the colon was so abnormal that it was quite impossible to find it in the lumbar wound. The inguinal operation met all these objections. There was plenty of space and the bowel could be absolutely identified, there was no tension on the stitches, and little difficulty in finding an abnormal colon. Moreover, the inguinal operation had one great advantage, viz., that of enabling the abdomen to be explored and the site of the obstruction to be verified before opening the bowel. The objections raised to the inguinal operation were the subsequent prolapse of the bowel and its unsuitableness for urgent cases. In the author's experience prolapse was not more frequent in one case than the other. As to urgency, he had no hesitation in opening the bowel immediately, as was done by him in two cases with a perfectly successful result. The operation was performed as follows: The incision, two and one-half inches in length, crossed an imaginary line drawn from the anterior superior spine to the umbilicus, an inch and a half from the former bony point. The peritoneum being reached, it is pinched up by fine forceps and an opening made sufficient to admit the finger; it is then divided on the finger by scissors. The colon being found, a loop of it is drawn into the wound. In order to avoid prolapse, which is likely to occur if loose folds of the sigmoid flexure remain immediately above the opening, Mr. Cripps gently draws out as much loose bowel as will readily come, passing it in again at the lower angle as it is drawn out from above. In this way, after passing through one's fingers an amount varying from one to several inches, no more will come. Two provisional ligatures of stout silk are passed through the longitudinal muscular band opposite its mesenteric attachment. The provisional ligatures, the ends of which are left long, help to steady the bowel during the subsequent stitching of the skin; they should be about two inches apart. The bowel should now be returned temporarily into the peritoneal cavity, and then the parietal peritoneum should be stitched to the skin on each side of the incision, the muscular wall not being included; four sutures on each side are sufficient. The bowel is again drawn out and stitched to the skin and parietal peri-

toneum by seven or eight fine sutures on each side, the last suture at each angle going across from one side to the other. The bowel should be so attached as to have two-thirds of its circumference external to the sutures. If all goes well, Mr. Cripps prefers waiting until the fifth or sixth day before opening the bowel ; but if the abdomen becomes distended, or there is the slightest vomiting, he advises immediate opening of the bowel. Firm pressure by a pad and several turns of a bandage were important for the first few days, for should vomiting occur the bowel is liable to break away from its stitches. The ligatures may be safely removed on the ninth day.

Mr. Chavasse of Birmingham, in a clinical lecture on *Sigmoid Colotomy* (*Lancet*, January 5th, 1889), says the advantages of this operation are—(1) it is readily performed ; (2) the false anus being in front is easily attended to by the patient himself ; (3) the patient is able to lie on his back without discomfort ; (4) four or five inches more of the colon are left to perform its duties ; (5) the limits of the growth are more easily ascertained. Mr. Chavasse has performed this operation thirteen times for malignant disease of the rectum, and has had no ill results. Should the obstruction of the bowel not be complete, he recommends the procedure advocated by Mr. Herbert Allingham. This is to form a “spur” which shall cause a division of the sigmoid flexure into distinct upper and lower openings. A carbolized silk ligature is passed through the edge of the skin incision half an inch from the lower end of the wound, through the mesentery of the flexure and back through the mesentery and skin close to the point from which it started ; a loop is thus formed, securing a portion of the mesentery, and the free ends are tied tightly together. Another method which is performed extensively in Germany is to completely divide the colon, close the opening in the lower portion by sutures and drop it back into the abdominal cavity, bring out the upper end and fix it to the wound. This method has the disadvantage of immediately evacuating the fæces and runs the risk of allowing some to enter the peritoneal cavity.

At a meeting of the London Medical Society, held Jan. 14th,

1889, Mr. Herbert Allingham read a paper on *An Important Supplement to the Operation of Inguinal Colotomy*. He had observed, after several of his cases of inguinal colotomy, that the patients had suffered from a distressing procidentia of the intestine through the opening. He came to the conclusion that this only occurred when the sigmoid mesentery was of considerable length. To prevent procidentia in these cases he pulled out through the wound all the intestine that would possibly come forth; these portions he allowed to rest on the abdomen, and then sutured. From twelve hours to three days afterwards he entirely removed all these pieces of intestine, first of all applying a clamp about an inch from the wound to prevent the intestine slipping. Experience taught him that the clamp must be spiked, and must preserve a *firm*, tenacious grip, otherwise severe hemorrhage might ensue. The clamp should be allowed to remain on for twelve hours. He admitted that this further procedure, by increased danger of hemorrhage, aggravated the seriousness of the operation. He had treated five cases in this way. The chief points in the operation were: (1) The fact that pain occurred when cutting through the mesentery, but not in dealing with the intestine proper. (2) The supreme importance of using a spiked clamp that would under no circumstances slip or relax its hold; its correct use would prevent hemorrhage, the only thing to be feared. (3) The great length of intestines removed; he had removed from four to twelve inches. He advocated this method in lumbar colotomy where procidentia occurred.

Tapping and Irrigation of the Ventricles of the Brain.—At a meeting of the Philadelphia County Medical Society, held Feb. 13th, 1889, Dr. W. W. Keen read a preliminary report on the above subject (*Medical News*, March 9th, '89). Last autumn he made a proposition for tapping the lateral ventricles. At that time he was not aware that the procedure had ever before been suggested, but he has recently learned that, in 1881, Wernicke suggested it in a general way by the lateral route. The operation, however, Dr. Keen believed, was never performed until he did it in a case of marked choked disc on both sides, with com-

plete blindness dating from last Christmas. He tapped the ventricle five weeks previously, reaching it by the lateral route at a depth of $1\frac{3}{4}$ inches from the dura mater. A half inch trephine opening was made, a crucial incision in the scalp and dura mater employed. From two to four ounces of cerebro-spinal fluid escaped from this opening daily. After a week the discharge increased to four to eight ounces daily, when a horse-hair drain was used. On February 8th he trephined the opposite side, thinking there might be a tumor on the posterior lobe on that side, but he found none. On February 12th he washed out the lateral ventricles, passing about eight ounces of a solution of boracic acid (4 grs. to 3i) from one side to the other. There was some little irritation resulting from manipulation, but the moment the warm solution began to pass through the ventricles the child settled itself into a position of complete comfort. The child did not suffer any notable rise of temperature after the operation.

Treatment of Cystic Tumors.—Dr. Barthe, physician to the Broussais Hospital, has published a note on a new method of treatment applicable to synovial cysts, sebaceous wens, and, in general, to all cystic tumors of the skin and of superficial regions. Starting on the principle that arsenical injections determine a moderate inflammation of the tissues which does not go on to suppuration when certain very simple precautions are taken, and which is often followed by an atrophic process, the author considered this remedy a convenient means of treating certain tumors which are benign in their nature, but are inconvenient, and for which one often hesitates to advise a surgical operation. The first case tried was that of a girl, aged 12, with a synovial cyst of the wrist, the size of a walnut, of several months duration. Two minims of Fowler's solution of arsenic were injected into the cavity of the cyst. The operation produced sharp pain; next day there was swelling and tension of the sac. This soon diminished, and in ten days the tumor had entirely disappeared without leaving a trace of its existence. He has treated other cystic tumors with equally good results.—(*Paris Cor. of N. Y. Medical Record*, April 27, '89.)

Surgical Treatment of Purulent Pericarditis.—At a meeting of the Clinical Society of London, held November 23rd, 1888, Dr. Dickinson reported a successful case of purulent pericarditis treated by free incision and drainage. This is now the third successful case published which has been thus treated. The first two cases are reported in the Transactions of the Royal Medico Chirurgical Society, vol. xlvi. (1883), by Dr. S. West. Many fatal cases have been recorded. Purulent pericarditis is usually such a fatal disease that severe measures may be justifiably employed for its treatment, and although the physical signs which accompany it do not always enable physicians to diagnose with certainty between it and serous pericarditis, it is always possible to undertake a puncture for diagnostic purposes. In Dr. Dickinson's case Mr. Rouse performed the operation, and the fifth right interspace was chosen for incision. The pericardium had previously been aspirated several times, and once as much as 19 ozs. of pus drawn off, much to the relief of the patient, but the pus again collecting, and the general symptoms becoming distressing, incision was performed and a tube introduced. In two months the patient, a lad of 10 years, was perfectly well.

In the discussion which followed several cases were narrated. Dr. West said that, as a rule, the most suitable place for puncture was in the fifth left interspace, close to the sternum. Mr. Godlee drew attention to some anatomical features. In children the left pleura so far covered the anterior surface of the pericardium that if the puncture were made an inch away from the side sternal line the chance of the instrument laying open the pleura before reaching the pericardium was very great, and pneumothorax might be added to the list of symptoms. The internal mammary artery, too, ran so close to the sternum, in the fourth and fifth interspaces, that sufficient distance between it and the side of the sternum hardly existed for the introduction of a knife, and he recommended that the vessel be cut down on and tied before the pericardium was incised.

Hypertrophy of the Tonsils and its Treatment.—In a lecture delivered in Edinburgh recently, Sir Morell Mackenzie said that

chronic tonsillitis or hypertrophy of the tonsils proceeds from two causes. A large number result from a low form of inflammation in childhood. When the tonsils obstruct the breathing, portions should be removed, also if the enlargement be associated with frequent attacks of inflammation. There is another condition which requires a similar proceeding: when the follicles of the tonsil are much enlarged the affection cannot be cured except by taking off a section. Dr. Mackenzie uses a tonsillotome which is a modification of Physick's. As a general rule, lightness of touch is the chief desideratum in operating, but in tonsillotomy it is the reverse. Heaviness of touch is the important thing. The tonsillotome must be pressed well over the tonsil, which is also to be projected into it by pressure with the thumb placed under the jaw. It is most important to take off enough. Dr. Mackenzie says hemorrhage in this operation is rare, but it has occurred; the carotid in some instances has had to be tied. He advises in hemorrhage the use of two parts of tannic acid and one part of gallic in a little water. The patient should be given two teaspoonsful, and should sip them slowly. The bleeding stops almost at once. The patient must be told to swallow the liquid, not gargle. Application with a brush will do no good. He should swallow the fluid slowly, and must on no account wash out his mouth with a gargle. The advantage of the addition of gallic acid is that it prevents the tannic acid from dissolving.—(*Condensed from Edinburgh Medical Journal*, May 1889.)

Operative Treatment of Hypertrophied Prostate.—Dr. F. S. Watson, in a well illustrated article (*Annals of Surgery*, Jan. 1889), discusses the various methods recommended for the relief of enlarged prostate. He divides the operations into *palliative* and *radical*, and his conclusions are as follows: (1) The mortality of the radical operations is certainly not higher than the palliative ones. (2) Of the palliative operations, that of suprapubic puncture with retained canula is by far the most dangerous. Its chief danger lies in the likelihood of urinary infiltration into the prevesical space. The perineal drainage is safer than suprapubic, but the chief objection to all palliative operations is that they do not remove or modify the pathological conditions. The

mortality of the radical methods, though less than half as great as that of the palliative ones, is still high ; but it must be remembered that many more cases die from unskilful catheterization than from any or all the radical operations performed by competent surgeons. (3) Operative interference should be undertaken when there is inability to urinate spontaneously, frequent attacks of retention, difficult, very frequent (once every hour), or very painful catheterization, impossibility of catheterization, a purulent or hemorrhagic cystitis, and failure of palliative treatment. (4) As radical operations are not more dangerous than palliative ones, they are generally to be preferred ; as, anatomically, two-thirds of all cases are operable from the perineum, and, clinically, the perineal operations are the safest, the surgeon should open the membranous urethra and explore ; twice out of three times the operation may be completed by this means. In the other third of the cases, a long perineal distance or a long salient growth will make the supra-pubic method necessary. Dr. Watson reports two cases—one operated on by the supra-pubic method, which ended fatally, and one operated on by the perineal method, which proved successful.

Mr. Mayo Robson, in a paper entitled *Prostectomy : a Sequel to the Operation of Suprapubic Lithotomy* (*British Medical Journal*, March 9th, 1889) advocates in cases of old men with stone and enlarged prostate that suprapubic cystotomy be performed so as to enable the surgeon to deal with both troubles at one sitting. He reports two cases successfully treated in this way. After the stone was removed the obstructing prostate was cut away with scissors. In one case, with the finger and forceps two masses the size of walnuts were removed from either side of the urethra. The masses were lobulate, and presented the character of adenoid tissue. In both cases the patients made a good recovery, being able to urinate through the natural passage.

Mr. Walter Whitehead (*Brit. Medical Journal*, April 13th, 1889), in a paper read before the Medical Society of London on *The Treatment of Confirmed Catheter Life by a Permanent Perineal Opening*, after briefly reviewing the more recent methods

of surgical procedure, stated that the operative part of his plan of treatment differed in no material respect from that of an ordinary median urethrotomy. The originality commenced with the after treatment, when, through the opening made in the membranous urethra, he retained an India-rubber tube until a sufficient time had elapsed for fistulous communication with the bladder to become cicatrized. After this the tube was worn no longer continuously, but the patient was instructed to regularly withdraw the urine through the fistula by means of a catheter. When cystitis coexisted with enlarged prostate, he recommended that advantage should be taken of each extraction of urine to give the bladder suitable medical irrigation before the withdrawal of the catheter. Several successful cases were narrated. The advantages claimed for this operation were that the bladder could at pleasure be completely relieved of its contents; it provided a permanent channel through which a perfect cure could be substituted for an imperfect system of washing out the bladder, and caused six inches of the most sensitive portion of the urethra to escape the irritation produced by passing the catheter in the ordinary manner. By the maintenance of a permanent opening the relapse which almost unavoidably occurs when the opening closes is avoided. The operation is performed by first passing a staff into a moderately distended bladder; a lithotomy knife with the edge turned upwards is plunged directly into the groove of the staff from a point an inch above the anus to a point a little in front of the apex of the prostate. Mr. Whitehead prefers to enlarge the skin incision as he withdraws the knife, leaving the external wound when finished about one inch in length and directed from the raphé to the centre of the space between the anus and the tuber ischii. This makes a clean cut wound which will not lodge urine.

A great number of operations have been devised for the relief of the difficulties arising from enlarged prostate, and none of them suit all cases or are completely satisfactory. Mr. R. Harrison's method of tunnelling the prostate has been already alluded to in this Retrospect. Mr. Harrison believes that by prolonged retention of a tube in the bladder through the perineum the

prostate undergoes diminution in size. Mr. McGill of Leeds advocates the suprapubic incision and removal of the diseased portion of the prostate through this. By this method he holds that the operator can always see the extent of the growth and remove the obstructing portion (*Lancet*, vol. ii, 1887, p. 1016). Mercier invented a special knife, which he employed through the urethra, the instrument being shaped like a lithotrite. Bottini of Italy used the galvano-cattery with some success. Operations on the prostate are frequently attended with free hemorrhage, but can be readily arrested by pressure or the hot douche. Severe symptoms sometime follow, such as bronchitis, acute pleurisy, and Mr. Jessop of Leeds lost a patient from acute parotitis. These operations should only be performed when there is cystitis with a very irritable bladder, frequent hemorrhages from the prostate, or when the patient is unable himself to pass the catheter. In the *British Medical Journal*, April 27, 1889, Mr. A. Lane, of Guy's Hospital, reports a case in which he operated by the suprapubic method. The man was aged 72, suffered from bronchitis, and had sudden and complete obstruction, which was relieved by catheterization. This was followed by an excessive amount of hemorrhage, which much enfeebled an already broken down individual. The prostate was enormously enlarged. Operation was performed by suprapubic incision and a large mass of the middle lobe removed by a wire écraseur. In ten days the man died from exhaustion. Apparently the lungs were very emphysematous and the tubes full of sticky pus; other organs healthy. At the late meeting of the American Association of Physicians and Surgeons held in Washington, Dr. Hunter Maguire of Richmond, Va., reported several cases operated on by the suprapubic method, where the skin opening was at a somewhat higher level than the opening in the bladder, thus making a valvular canal (a sort of artificial urethra), through which the patient could discharge his urine at will. We have not yet solved the problem how best to treat enlargement of the prostate.

Trephining for Cerebral Hemorrhage.—At a meeting of the Clinical Society of London, held April 12th, 1889, Mr. Herbert Allingham read a paper on a case of cerebral hemorrhage in which trephining was done. The patient was shown. He was a man, aged 40, who was admitted into the Great Northern Hospital in the following condition: He had fallen off a tram-car while semi-intoxicated and was taken into hospital. When examined he complained of pain in the left shoulder, but there were no external signs of injury to the head. Next morning, Dec. 8th, he was rather drowsy, and complained of headache on the right side of his head. The pupils were equal and reacted to light. There were no signs of paralysis, and no vomiting. On the evening of Dec. 13th his breathing was noticed to be rather labored and stertorous, and he became more drowsy and apathetic, not noticing things about him. At 6 A.M. he had a convulsion. It began in the muscles of the left side of the face, the mouth being drawn upwards, and the eyelids moved in clonic spasm. The muscles of the neck were next affected, the chin being drawn towards the right shoulder. Subsequently the left arm and leg passed into a state of clonic spasm. The eyes were not noticed to deviate to either side. Urine acid, no albumen or sugar, and was passed unconsciously. There was no optic neuritis. The fits recurred at frequent intervals. On Dec. 14th Mr. Allingham decided to operate. A curved incision was made, ascending from the external angular process to the malar process, and a large semi-lunar flap turned down so as to expose the temporal muscle; the muscle was divided from its origin and also turned down; a crown of bone was then removed over the right fissure of Rolando—about $2\frac{1}{2}$ inches behind and one inch and a half above the external angular process. The posterior branch of the middle meningeal artery was exposed. The

artery and dura mater were found intact, but the dura mater bulged and did not pulsate. It was divided, together with the artery; a large blood-clot was exposed, and about three ounces of black clot removed by the finger and irrigator. On inserting the finger, the brain was felt to be compressed and the cavity extended forwards and backwards as far as the finger could reach. The pia mater was intact, except at the right frontal lobe, where the cerebral hemisphere was felt to be lacerated and soft. The cavity was well irrigated with carbolic solution (1-40), which came out clear. One catgut suture was introduced into the dura mater and two drainage-tubes inserted into the skull, one going upwards and the other downwards to its base; the ends were brought out through a hole made in the lower part of the skin flap. The wound was dressed with carbolized gauze. Next day the patient had a slight fit, confined to the face. On Dec. 16th he was quite rational and began to move the left leg. On Dec. 17th paralysis had gone; he moved both arm and leg well and was quite sensible. From that date he made an almost uninterrupted recovery. On Feb. 18th he left hospital quite well. Mr. Allingham was of opinion that the case was unique, as it was one of cerebral hemorrhage and not due to hemorrhage between the skull and dura mater.

Trephining for Spinal Injury.—At a meeting of the Medical Society of London, held April 8th, 1889, Mr. Herbert Allingham (*Lancet*, April 20th, 1889) read a paper on fracture of the spine treated by trephining. Two cases were reported. The first was injured by a fall of forty feet, and was completely paralyzed, having lost all sensation from a point on a level with the ensiform cartilages. As he did not improve a month after the accident, Mr. Allingham trephined the spine, making an incision about ten inches in length over the 5th, 6th and 7th vertebræ. The muscles were then turned aside and it was seen that the laminæ of the 6th vertebra was very badly fractured and depressed. The spinous processes and laminæ of the 5th, 6th and 9th were removed with cutting bone forceps, and the cord was exposed for about four inches; it was rather bruised. The theca was not opened, and the operation

took one hour and a half. Sutures were put in the skin only ; no deep sutures were used. A large drainage-tube was inserted and antiseptic dressings applied. The wound healed in ten days, and for a while improvement took place, the line of sensation recovering to within an inch of the umbilicus, but since then it had remained stationary. In the second case the patient had fallen from a house and was paralyzed from a line seven inches above the umbilicus six days after the accident. No improvement occurring, the spine was trephined, and the spinous processes and laminæ of the 3rd, 4th, 5th and 6th vertebræ were removed. The cord was found crushed, so the dura was opened. In two weeks the wound had healed. The patient died seven months after the accident of bedsores and cystitis ; and at the autopsy the cord was found to be almost divided into two parts, both ends tapering down to a fine point. Mr. Allingham drew the following conclusions from these cases :

(1) That by trephining, it was evident from these cases that inflammatory ascending changes were prevented.

(2) That no bad symptoms followed from the opening of the spinal dura mater and allowing the cerebro-spinal fluid to escape.

(3) The operation, though tedious, is not a difficult one to perform, and does not in any way diminish the chance of recovery.

He suggested that in all cases of spinal injury followed by paralysis and loss of sensation, trephining should be done at the end of a week if the patient showed no sign of improvement, so that if symptoms were produced by pressure of blood on displaced bone they might be removed before ascending and descending changes came on.

In the discussion which followed the reading of the paper, Dr. Beevor alluded to the difficulties that arose in consequence of the fact that the anæsthesia began much lower down than the seat of injury would lead one to suppose. He said that the question as to the points in the cord at which the sensory fibres were given off required elucidation.

Mr. Shattock has lately been working at this point, and has arrived at fairly definite conclusions as to the origin of the sensory nerves.

Mr. Wm. Thorburn of Manchester publishes a short note on *Spinal Localizations as indicated by spinal injuries in the lumbo-sacral region.* (*Brit. Med. Jour.*, May 4, '89.) From an analysis of a number of cases of spinal injury, certain definite conclusions as to the functions of the various nerve roots have been published in the form of a table.

Subdural Division of Posterior Roots of Spinal Nerves.—Mr. W. H. Bennet, at a meeting of the Royal Medical and Chirurgical Society of London, held April 23rd, 1889, read a paper on a case in which acute spasmodic pain in the left lower extremity was completely relieved by subdural division of the posterior roots of certain spinal nerves, all other treatment having proved useless, and in which death resulted from sudden collapse and cerebral hemorrhage on the twelfth day after operation, at the commencement of apparent convalescence. A laborer, aged 45, was admitted into St. George's Hospital, under Mr. Bennet's care, August 29th, 1888, suffering from acute pain, sometimes spasmodic, in the left leg, apparently due to syphilitic thickening of the tibia of nine years duration. The patient was submitted to the following treatment without relief, viz., (1) the administration of drugs, *e.g.*, iodide of potassium, mercury, anodynes and narcotics; (2) trephining and linear osteotomy of the thickened tibia; (3) amputation through the knee-joint; (4) stretching of the sciatic nerve; (5) resection of two inches and a half of the same nerve. By December 8th the patient's condition was much worse; he had lost strength and was much emaciated, the pain was much worse, the spasms being violent and frequent. By Dec. 23rd it was clear that death must soon ensue if the suffering could not be relieved by some surgical proceeding. Mr. Bennett therefore proposed to lay open the spinal canal, examine the membranes and, if necessary, the cord itself over the region of the lumbar enlargement in order to see whether any lesion existed. In the event of this exploration proving negative in result, it was proposed to divide the posterior roots of these spinal nerves, the distribution of which seemed to correspond to the areas over which the pain was felt. The operation was performed Dec. 24th, and the pos-

terior roots of the 1st, 3rd, 4th and 5th lumbar, and 1st and 2nd sacral nerves being divided. The patient was entirely relieved of his pain. For two days the patient's condition was critical, and later there was troublesome diarrhœa. By January 3rd the wound had healed, except a small sinus which discharged cerebro-spinal fluid. On the 4th, patient felt discomfort in his head, vomited, became collapsed, and died in a few hours. At the autopsy a large clot was found over the left occipital lobe of the brain. The cord was healthy, but opposite the 7th and 8th dorsal vertebræ was a well-defined thickening of the arachnoid.

Prof. Korteweg (*Archiv für Klin. Chir.*, Hft. 4, '89), in an interesting article on *Statistical Results of Amputation of the Breast for Cancer*, shows from the tables of Winiwarter, Oldekop, Sprengel, Hildebrand and Küster that recurrence is more frequent in cases operated on early, and that the whole length of life after operation is shorter. He explains this by stating that the more malignant the cancer the earlier it is operated on the earlier it returns. In these cases the glands are usually affected early. He states that the great majority of the cases of return occur in the cicatrix and seldom in the glands of the axilla. In the more malignant and rapid cases the glands are early affected. In the more benign cases, where the glands have not become involved, extirpation of the breast alone has been followed by a comparatively large number of cures.

Some years ago, according to statistics, a much larger number of cases existed of simple cancer of the breast without involvement of the axillary glands. In 1870, in 60 cases of breast cancer, there were 24 where the axillary glands were not affected; in two only of the 24 cases was there a permanent cure. At present, in 60 cases, only 10 are without involvement of the glands, and out of these, two are permanently cured. He explains this by the fact that now the glands are removed when they are not actually involved but merely inflamed, when formerly they would not have been removed. Hence the result is the same. The 14 additional cases which were regarded as simple mammary cancers would now, because the glands are felt to be slightly enlarged when the axilla is opened, not be re-

garded as simple, hence there apparently existed a larger number of cases where the glands were not involved than at present. Again, formerly very severe and advanced cases were not operated on as at present. He urges strongly the thorough removal of the growth locally as well as the axillary glands, and favors early operation in all cases.

On the Causes of the Local Recurrence of Cancer after Extirpation of the Mammary Gland.—Dr. Heidenhain of Berlin, at the recent congress of the German Society of Surgery in Berlin, read a paper on the above subject. (*La Semaine Médicale*, May 1, 1889, and *Medical News*, June 1, 1889.) He had made a histological examination of eighteen cases of cancer of the mammary gland for primary cancer. In all cases in which there had been a recurrence he was able to make out by microscopical examination that fragments of cancer had remained in the wound after operation. If it is easy to see infiltrated lymphatic glands, it is not easy to see by the naked eye if the tumor has been completely removed. In the eighteen cases which he examined, he had tried to ascertain whether in the section of the tumor which was in contact with healthy tissues he would find healthy or diseased tissues; on the presence of healthy or diseased tissue would depend the recurrence of the disease. He had in this manner examined several fragments of each tumor; in twelve cases he had found the tissues infiltrated with epithelial rays, and out of these twelve cases there had been eight recurrences, one death, one patient had disappeared, and two others remain well. In six cases he had found only healthy tissues, and in those six cases up to date the cancer has not reappeared. In cancer of the breast, the epithelial extensions follow the lymphatic vessels and extend often to the pectoral aponeurosis; it is therefore most important to take away the aponeurotic covering of the pectoral muscle, and even to cut into the muscle so as to be sure that the lymphatic vessels, which cross the aponeurosis perpendicularly, are not infected. Dr. Küster has been in the habit of taking away this aponeurosis, because of the bad prognosis presented by cancerous tumors which are adherent to the pectoral aponeurosis. In Von

Volkman's practice, out of sixty-five cases in which the tumor was adherent to the pectoral aponeurosis two were cured, and in all the others the disease has returned. Out of twenty-one cases of the same kind operated on by Küster but a single one is still alive, and she had a return of the trouble; hence when the tumor is adherent, it is well to take away a good part of the muscle and to clean it thoroughly so as to be sure that the whole growth has been removed.

Statistics of Cancer of the Breast.—Dr. Fink of Prague has collected the histories of 194 cases of cancer of the breast treated in Prof. Gussenbauer's wards from 1878 to 1886, tracing after histories to the end of September 1888. He found that at the 41st year the frequency of cancer suddenly increased, slowly rising towards the age of 60; 128 of the cases occurred between 40 and 60, 38 between 60 and 80, and 28 between 20 and 40. Activity of the sexual functions had a marked etiological influence, especially in regard to long periods of activity of the functions of the mammary glands; 72.1 per cent. of all cases had borne children, 62.8 per cent. had suckled them. In 22 per cent., mild or severe inflammatory disease had attacked the affected breast. In only 12.7 per cent. could a clear history of injury or prolonged mechanical irritation be obtained. Direct hereditary predisposition was only substantiated in 8 out of 194 cases. Both mammæ were affected with equal frequency. The disease was found to begin in the superior external segment of the breast in a very large majority of the cases—in 104 out of 171 which were carefully and early inspected. In 53 cases, metastases were detected on an average of twenty-five months after the beginning of the disease. These were situated in the pleura, lungs and liver. One hundred and fifty-three of the cases underwent amputation of the breast with clearing out of the axillary glands; the mortality was 3.3 per cent. Ninety of the cases died of recurrence of the cancer, but Dr. Fink states that most of the women did not apply for relief until the disease was far advanced; 21.6 per cent. remained free from the disease for two years, and 16 per cent. for three years. The patients who had undergone operation lived seven months longer than those

whose breasts were not removed.—(*British Medical Journal*, June 1, 1889.)

Dr. J. Collins Warren, in an article on the *Diagnosis and Treatment of Cancer of the Breast* (*Boston Med. and Surg. Journal*, April 11, '89), says that the most important part of the operation for removal of cancer of the breast is the careful dissection of the fascia from the pectoral muscle, for it is in this tissue that capillary lymphatics are concealed, which form hiding places for the outposts of the disease. Careful attention should also be paid to the margin of the pectoral muscle; not only should the fascia which covers the axilla be dissected off from it, but its lower border should be well freed from fat and connective tissue. The axilla is best opened by a cut through the skin along the edge of the pectoralis, until we come to the edge of the coraco-brachialis; continuing down on this muscle a short distance with the knife, the skin and superficial fat drop away sufficiently to disclose the great vessels lying beneath a thin fascia; opening this fascia backward along the line we have come exposes the contents of the axilla, and especially the branches of the vessels, which can now be secured. A pyramidal mass of fat is now dissected out, the apex reaching sometimes to the clavicle, the base frequently extending deeply into the subscapular group of muscles. The glands which lie near the clavicle will have to be removed separately, and can best be enucleated from the neighborhood of the vessels by the finger. If they are numerous, the pectoralis can be separated on the line selected for the ligature of the axillary artery below the clavicle, and the glands and some of the loose tissue can then be readily removed.

Excision of the Scaphoid for Flat-foot.—Mr. Richard Davy (*Lancet*, April 9th, 1889) says that this static deformity is so commonly met with in debilitated subjects as to suggest many points of consultative interest. He referred to Prof. Ogston's paper read before the Medical Society of London in January, 1884, on *Flat-foot and its Cure by Operation*, which recommended the excision of the astragalo-scaphoid articulation in a wedge-shaped manner and pegging the scaphoid and astragalus together, and stated that Prof. Ogston's paper led him to again

investigate the subject. The result was that he found that excision of the scaphoid fulfilled all the requirements necessary and resulted in giving the patient a useful foot. Should any difficulty be experienced in removing the scaphoid, the easiest plan is to chisel the bone in a wedge-shaped form and then carefully clean the bone out, leaving the cartilage on the head of the untouched as well as the cartilage on the cuneiform bones. The foot is then wrenched inwards so as to press back the astragalus into place, and make the cartilage of the astragalus touch the cartilages of the cuneiform bones. No little spicula of bone must be left behind between these two opposing sets of cartilages. The utmost cleanliness, of course, should be observed, and after the first stage of inflammation is passed a plaster of Paris splint is advocated. The operation is reserved for advanced and rare forms of club-foot only, where bony deformity and dislocation have occurred, and the distortion cannot be reduced by the manual efforts of the surgeon.

Mr. Golding Bird (*Lancet*, April 9th, 1889), in a paper on *Operations on the Tarsus in Confirmed Flat-foot*, says there is a class of cases where the arch is so fallen that a convexity rather than a flatness takes its place, due to two tubercles projecting downwards the scaphoid and head of the astragalus; along with these objective symptoms there is a most wearying and constant aching under the external malleolus. The pain is always present on standing, and after a few hours it becomes a physical impossibility to stand any longer. The continued deep-seated pain the author declares to be due to the fact that, since the arch of the foot is sunken and its piers are now wider apart on the inner side of the foot, a corresponding crowding or mutual pressure of the bony structures forming the outer or supporting edge of the sole takes place, which mere reposition of the foot will not improve. It is in these cases tarsotomy in some form is called for. Mr. Bird operated on four such cases in 1878-80. All were between 12 and 17 years of age. In two the scaphoid bone was removed, and in the other two the scaphoid and head of astragalus. In all the results were good; all were relieved of pain, but in only one was the arch restored.

Inflammation of the Seminal Vesicles.—Every surgeon has met with cases of supposed prostatitis and cystitis which resist all treatment. Frequent and painful micturition characterizes these cases, and they go from one surgeon to another seeking relief but not obtaining it. Such cases are always obscure and most commonly follow an attack of gonorrhœa. An explanation of this condition is offered by Mr. Jordan Lloyd. In an article published in the *British Medical Journal* of April 20th, 1889, he calls attention to the part played by inflammatory disease of the seminal vesicles in these obscure cases of vesical prostatitis one so often meets with. He considers "seminal vesiculitis" analogous to Fallopian salpingitis, and states that this is dependent on similar causes. The disease is usually secondary to simple or gonorrhœal urethritis, the latter constituting the most frequent cause. It may also follow simple urethritis due to the passage of a sound, urethral stricture, or coitus with a woman suffering from leucorrhœa. It is also common as a complication of gonorrhœal epididymitis. The severe type sometimes, but not frequently, ends in suppuration. The tendency is to resolution, but if suppuration occur, pus may burrow laterally into the ischio-rectal fossa or into the deep circumrectal tissues, or it may escape by the ejaculatory duct, or the abscess may rupture into the bladder or rectum. The disease sometimes runs a chronic course, and results in cystic enlargement of the vesicle due to obstruction of the duct. In one of Mr. Jordan's cases the cyst contained ten pints of fluid. The symptoms of "seminal vesiculitis" are essentially those characteristic of vesical irritability, inflammation of the neck of the bladder, and of acute prostatitis, with the additional symptoms of almost constant painful erection of the penis. Nocturnal emissions are common, as is also blood in the seminal fluid. Physical examination per rectum reveals the presence of an elongated tumor, situated above the prostate, at the base of the bladder, running obliquely upwards and outwards. The presence and size of this tumor are made more manifest to the exploring finger if a large metallic sound is passed into the bladder and moved from side to side over the tumor. In the acute form, heat, tenderness and swell-

ing are felt over the prostate, and if accompanied by the symptoms of vesical irritability, with no urinary evidence of cystitis, this sign should make the diagnosis certain. Mr. Lloyd recommends incision through the perineum rather than through the rectal wall for evacuation of pus when suppuration occurs. He urges digital examination of the rectum in all cases of gonorrhœa or epididymitis which present vesical symptoms, and believes that in most of such cases this disease will be found.

The subject is one of great interest to surgeons, and it is hoped that more light will be thrown on the subject by investigations which are sure to follow the publication of Mr. Lloyd's paper.

Surgical Treatment of Pulmonary Cavities.—Mr. J. D. Harris (*Brit. Med. Jour.*, May 4, 1889) reports the case of a gentleman, aged 33, who, in 1887, suffered from abscesses of kidney, which broke in four or five places in the loin, and from which he was convalescent, when in March, 1888, he was seized with a rigor, and a pneumonia of the left lung rapidly developed. The pneumonia ran a very unfavorable course, and instead of undergoing resolution, broke down into abscesses. In May he was rapidly emaciating, and had an incessant hacking cough with considerable expectoration, which, towards the end of the month, became foetid. There were now all the physical signs of a cavity of the lung posteriorly, just below the angle of the scapula, on the inner side. By the end of June he was in a highly critical condition and was much run down. Operation was advised and consented to. On July 2nd, without any anæsthetic, an incision was made through the skin at the lower border of the intercostal space, which ran through the centre of the area of loudest pectoriloquy. An aspirating needle was introduced, and pus flowed through the tube; the tissues were now cut through down to the pleura; this was then cut through, and following the aspirating needle the lung was incised. A silver tube was introduced and afterwards a large gum-elastic catheter. Considerable discharge came away. On account of the foetor the cavity was daily syringed out with a weak solution of carbolic acid. The tube was kept in a month, and then a rubber

tracheotomy tube was substituted. The patient went on well. His cough ceased and he increased in weight. By Christmas, 1888, only one small renal fistula existed, and the pulmonary fistula had completely healed.

Renal Surgery.—The progress of abdominal surgery has been especially marked of late by the increasing number of records of operations on the kidney. Since Mr. Thomas Smith, twenty years ago, advocated the removal of a renal calculus by operation, and Professor Simon proved, after making a series of experiments on dogs, that the removal of one kidney did not necessarily produce acute or chronic disease of its fellow, a whole series of operations on the kidney have come into vogue. There are nephrorrhaphy, or sewing up a floating kidney by its capsule to the parietes; nephrotomy, or incision of the kidney; and, lastly, nephrectomy, or removal of the kidney entire. Notwithstanding the truth of Simon's theories, and the encouraging results claimed by several surgeons, nephrectomy must still be considered a very serious undertaking.

There is a great difference of opinion amongst the few really experienced operators as to the right manner of performing nephrectomy. Some, like Mr. Lucas, advocate the lumbar, and some, like Mr. Thornton, the abdominal incision. An instructive discussion took place at a meeting of the Royal Medical and Chirurgical Society on April 9th, 1889. Mr. Lucas considered it necessary to estimate for some time the amount of urea excreted daily. If this were found to be less than half the normal quantity, then nephrectomy, he maintained, would be a very serious operation. Mr. Knowsley Thornton said that if a large suppurating kidney be treated medically, not surgically, the labor thrown upon its fellow would be possibly greater than that entailed by the operation; he also quoted one of his cases where both kidneys were diseased, yet when one containing twenty pints of pus was removed, the operation was borne well. To form anything like a correct estimate of the excreting power of the healthy organ in cases where the diseased kidney is not absolutely obstructed is very difficult in actual practice. Dr. Tuchmann's ureter forceps, for temporarily blocking the orifice

of one ureter for a time, may prove of service, but many find them difficult to apply. Catheterization of the ureter, practised by Newman of Glasgow, and others, requires much special training. Lastly, physicians, physiologists and chemists have possibly more to discover as to the import of each constituent of the urine. As yet, much in respect to calculating the powers of a healthy kidney when its fellow is diseased is theoretical or empirical.

Separation of the Lower Epiphysis of the Femur.—In an interesting article on this somewhat rare accident by Mr. Mayo Robson (*Annals of Surgery*, Feb. 1889) the meagre description given by surgical authors is alluded to. He does not think the accident is as rare as the standard works on surgery would lead us to believe. In the museum attached to the Yorkshire Medical College two interesting specimens exist. In both, amputation was performed for gangrene. The epiphysis lies with its articular surface forwards, and the lower end of the shaft of the femur (the diaphysis) is directed backwards and presses on the popliteal vessels; the gastrocnemius is attached to the diaphysis. The second specimen was from a primary amputation of the thigh performed by the late Mr. Samuel Hey on account of a compound diastasis of the lower epiphysis of the femur. In this case the lower end of the diaphysis projected through the wound in the popliteal space, whilst the epiphysis was directed forwards. Mr. Robson relates a case which came under his own observation. A boy, aged 16, was kicked by a horse on the outer side of the left knee-joint. When admitted to hospital there was considerable swelling with fluctuation around the knee. The leg and foot were enormously swollen. The foot everted and the leg rolled outwards. No pulsation could be felt in the tibial arteries, the circulation being interrupted by the sharp edge of the lower end of the diaphysis of the femur, which was pressing on the popliteal vessels and making the skin bulge in the popliteal space. The joint was in a state of semi-flexion, and extension was most painful. A marked depression was felt immediately above the patella, beneath which could be felt a movable mass with rounded edges. There was one and a half inches of shortening. Under

ether the leg was fully flexed and the parts forced into proper position, then the leg was extended and placed on a McIntyre splint. Pulsation at once returned in the tibial vessels and the engorged vessels emptied themselves in a few hours. Two months after the leg could be fully flexed and there was no deformity. Mr. Robson mentions two other cases in the practice of his colleagues, in one of which excision was performed, and in the other a good result followed reduction. In most cases the diagnosis is not difficult. The shortening of from one to two inches, the projection of the lower end of the diaphysis into the popliteal space, the displacement of the epiphysis in the front of the femur, and the interference with the circulation of the leg, form a group of symptoms which are not easily mistaken. The prognosis is serious unless the injury be diagnosed and treated at once; the dangers arise from the pressure of the lower end of the diaphysis on the popliteal vessels, interfering seriously with the circulation of the leg and producing great œdema or gangrene. In one case reported secondary hemorrhage ensued.

Mr. Robson draws attention to the fact that this injury differs from transverse fracture of the lower end of the femur; in transverse fracture the upper end of the lower fragment projects into the popliteal space, whereas in diastasis the lower end of the upper fragment projects into the space. The treatment is reduction under ether, and if reduction is impossible, excision. I have seen two cases of this accident. In both the accident had occurred several years before, and the patient had good use of the limb. One case under the care of one of my colleagues, the diaphysis had been displaced outwards and caused a remarkable obliquity and deformity of the lower end of the femur which interfered with the lad's progression. The limb was straightened by Macewen's osteotomy. The other case was kindly shown to me by Dr. Elder of Huntingdon. A boy, aged 7, fell and injured his leg. When the doctors arrived they found the lower end of the femur projecting through the flesh on the outer side of the popliteal space. They advised amputation, but this being refused, and failing to reduce the protruded bone, they sawed off two inches. The boy ultimately did well, and was able to go

about in three months. Now (ten years after the accident) he has perfect use of his leg, and the knee has as wide a range of motion as the other. He walks with only a slight limp, and measurement gives some two inches of shortening.

Extirpation of Goitre.—Dr. Eugene Hahn (*Archiv f. Klin. Chir.*, bd. 36), in a paper on a *Method of Partial Removal of Goitre without Tamponade or great loss of Blood*, says this method has been carried out on several patients affected with struma. A median incision is made from the incisura jugularis to the cricoid cartilage; to this is added a lateral incision dividing the sterno-hyoid and sterno-thyroid muscles, and then the superficial veins are ligated. In this way the whole gland is exposed. The left upper lobe is then released and lifted forward, the left superior thyroid artery tied; the inferior thyroid is clamped, and the middle artery tied by first exposing it in lifting forwards the gland and then passing a ligature about it. The same is done on the opposite side. After securing these vessels the capsule is divided in its whole extent, avoiding visible veins, and the glandular tissue is drawn forward with a hook. It is thus possible to remove sections of the gland with scissors so as to leave very little behind. There is very little hemorrhage. The inferior thyroid arteries are only secured by a clamp having a weak spring; this is done to avoid securing the recurrent nerve in a ligature. If disturbance of speech follows the operation, the clamps can be immediately removed. A weak clamp will control the circulation, but not injure the nerve. The wound should be stuffed with iodoform gauze, the clamps removed at the end of twenty-four hours, and secondary sutures applied.

Resection of Intestines.—At the meeting of the Edinburgh Medico-Chirurgical Society, held Dec. 5th, 1888, Mr. Cotterill reported a successful case of *Resection of a Gangrenous Transverse Colon*. The patient, a very stout woman, aged 38, had been subject to umbilical hernia for seven years. When seen by Mr. Cotterill she was seven months pregnant. The rupture was a bright red and angry-looking prominence about 14 inches in diameter. The patient vomited coffee-colored fluid mixed

with blood. The sac was opened and found to contain a large coil of gangrenous transverse colon, much sloughy omentum and free from fæculent matter. The gangrene appeared to be due, not to strangulation, but to pressure of structures in the sac between the pregnant uterus below and a firm binder which had been worn above. Fifteen inches of colon were cut away and the ends of the gut stitched to the edge of the skin-wound. Three days after the operation the woman gave birth to a child. A few months later an operation was performed for uniting the cut ends of the intestine. The upper end was first ligatured to avoid the escape of fæces. Traction was then made on the two ends until normal gut, covered with peritoneum, protruded sufficiently for resection. Instead of using a clamp, the operator passed a piece of thin India-rubber tubing through a small hole in the mesentery and round the gut, fixing it there with a pair of catch-forceps. Four inches of the upper segment of the colon and three of the lower were then cut away with portions of the mesentery. As the lower portion had been unused for five months it was very narrow and hard to join to the upper piece. By careful introduction of over 100 stitches, the ends were brought satisfactorily together. Fine curved needles were used, round, not flattened, and threaded with fine Chinese twisted silk, and the Czerny-Lembert suture was employed. The cut edges of the mesentery were sutured together, and the gut returned to the abdomen. The operation took three hours. On the third day fæces passed. In the two operations 22 inches of intestines were removed.

I have space only to refer to the following:—

A Successful Case of Immediate Resection of the Intestine for Gangrene, by Robert H. M. Dawbarn, M.D. (New York *Medical Record*, April 20th, 1889.)

Resection of Gangrenous Intestine occurring in Strangulated Herniæ, and the Report of a Successful Case: by A. J. McCosh, M.D. (New York *Medical Journal*, March 16, 1889.)

Free Division of the Capsule of the Kidneys for the Relief of Nephralgia.—At the recent meeting of the American Surgical Association, held in Washington, May 1889, Dr. McLane

Tiffany read a paper on the above subject. The author had suggested this mode of treatment four years ago. The patient was a married woman, aged 49. Had gonorrhœa and syphilis. Three years ago had a severe and sudden pain in right loin. These attacks occurred at regular intervals, the periods becoming shorter and pain more severe. Blood was seen at rare intervals; pain was characteristic from loin to groin increased by exertion. Pressure over right kidney caused severe pain. No tumor could be made out. Kidney calculus was diagnosed and operation was performed January 12th, 1889. The kidney was reached and incised, and a sound passed into its pelvis and a systematic exploration made, but no stone detected. The capsule was freely slit open for three inches and the wound closed. It soon healed. Since the operation no attacks of pain had been felt. In the discussion which followed the reading of the paper, several similar cases were related, several speakers stated that the relief of pain was often only temporary.

I very much doubt the existence of these cases of nephralgia. In nearly all these cases a stone would be found if thoroughly searched for. It has been my misfortune to cut down several times on the kidneys and fail to find a stone. The kidney was always explored in the usual way by sound, needles, and touch. In some of the cases pain was relieved, in others not. In a case where I cut down on the kidney in November, 1888, I failed to find a stone, the pelvis of the kidney was thoroughly explored with a short-beaked sound and the kidney punctured with needles, also handled freely, yet no stone was detected. The patient made a good recovery and was relieved of his pain for a couple of months, but then it returned with renewed violence, utterly incapacitating him from work. I determined to cut down, and if I failed to find a stone, to remove the kidney. The operation was performed in June, 1889, and the kidney carefully examined as before with sound, needles and by palpation; no stone was felt. It was then freely incised, the finger introduced, and at the upper end was felt a hard body encapsuled or rather floating freely in a separate compartment, the intervening tissue was scratched through with

the finger-nail, and a stone the size of a marble removed. This could not have been detected with a sound on account of the intervening membrane, and it had escaped the needle exploration. It could not be felt at all by the palpation, although the kidney was seized between the finger and thumb and thoroughly examined. I imagine that many so-called cases of nephralgia will, if the kidney be incised, turn out to be cases of calculus. The patient in this case made a good recovery.

The Treatment of Scrofulous Glands.—With the advent of aseptic surgery and improved surgical methods, the treatment of scrofulous glands has undergone a great change. Where formerly glands were left to nature to effect a cure, they are now removed before they have broken down and before the surrounding tissues are infiltrated with inflammatory products. Formerly the disease lasted for years, ugly sinuses continued discharging, and the scars left were most unsightly. Now, even if sinuses exist, they are opened up, the remains of the altered glands tissue, which is their cause, scraped out with sharp spoons, and the result as a rule is most favorable. Still, in some cases, when the general health of the patient is poor, and where glands rapidly break down, favorable results do not always follow, the infection spreads from gland to gland, and unless the operation be most complete and radical, the last condition of the patient is worse than the first. Of late much attention has been directed to this subject.

There are still surgeons who support the let alone treatment, others favor erosion, while others again say that the knife is the only method whereby the disease may be entirely and permanently got rid of.

Mr. Fred Treves formerly advocated cautery puncture and rest by means of a stiff neck splint; now he has discarded the cautery puncture, and resorts entirely to the knife when practicable, using the short spoon for the treatment of old sinuses and cavities, which, of course, cannot be excised. The cautery puncture he has entirely discarded, except to open suppurating glands (*Lancet*, Sept. 21, 1889). It is most important to remember when speaking of the surgical

treatment of tuberculous glands of the neck, that so slight an operation as erasion and scraping out of a gland may be followed by a general infection. Not a few surgeons who have treated scrofulous glands of the neck will be able to record cases of the kind. It is also well to remember that some cases of tuberculous disease of the glands cannot be treated to a successful conclusion by surgical methods alone. In some cases the general system must be improved by hygienic means, good food, sea air, &c. Drugs seem to have but little effect, though many practitioners seem to rely almost entirely on syrup of the iodide of iron. Whilst treating the glands it is well to look at the original cause, such as a tonsillitis, carious teeth, eczema, nasal trouble, &c.

In the *Lancet* for September 28th and October 5th, Mr. W. Knight Treves has an excellent article on the "*Diagnosis and Treatment of Scrofulous Glands.*" After giving the diagnostic points between simple adenitis, lymphadenoma and scrofulous glands, he goes on to describe the various physical conditions in which scrofulous glands may be found, such as soft elastic gland growth without inflammatory action, hard glands with degenerated tissue, generally caseous; suppurating glands, calcareous degeneration, &c. They may be movable or attached; in fact, scrofulous glands afford infinite variety in their form, course and duration, no two cases being alike. Two requirements are necessary, viz., to establish the general health and to remove thoroughly and completely the local disease. To establish the general health, the patient should be out in all weathers, have the benefit of the sea air, generous diet, wine, iron, cod liver oil, quinine, no worry or fatigue, should sleep in large airy rooms, and wear light warm woollen underclothing. Sea bathing is also advised. As regards drugs, Mr. Treves has no faith in them; he has seen perchloride of mercury in small doses produce a temporary improvement by reducing surrounding inflammatory deposit and no other drug has done as much. He holds that the local disease can only be got rid of in one way, and that is by mechanical means. The first indication in local treatment is to remove all sources of local irritation, excise tonsils if enlarged, extract decayed teeth, etc.

Local treatment to be successful must be thorough. It is a mistake to meddle with scrofulous glands unless we can get the whole thing away. The knife is the only instrument with which diseased glands can be completely removed.

Mr. Treves says scooping is chiefly applicable to two conditions of disease, viz., limited superficial gland enlargements, which have uniformly softened, and old fistulous tracts kept open by withered caseated glands. It is also useful in scraping away rotten skin, old inflammatory deposits and cleaning up generally. In removing glands, the skin incisions should be free and generally over the mass. If glands are enlarged beneath the sterno mastoid, an anterior and posterior incision in the line of the muscle is needed, and sometimes two incisions, if the glands be adherent to the vessels. Nothing is more dangerous than trying to extract glands through an insufficient incision. By perseverance, masses of caseous glands can be separated from vessels to which they are adherent. The author does not advocate sewing up the incisions, he prefers to keep the flaps together by sponges or antiseptic wool. Absolute rest must follow the operation; the head must be fixed by sand-bags, and there must be no mastication.

For years Mr. Treves has operated on scrofulous glands, sometimes removing as many as one hundred at a sitting, in others excising a mass of glands so large as to threaten suffocation, and yet he has never lost a case. He attributes this success to never having prematurely closed the wound.

The Treatment of Surgical Tuberculosis.—Since the discovery of the bacillus of tubercle by Koch, tuberculosis has been classed amongst the infective diseases. The fact that certain individuals are more predisposed to the attacks of bacillus than others does not alter the case, for under certain conditions persons not predisposed may yield to the attack of this microbe. At the Paris Congress of 1888, strong resolutions were passed relative to the destruction of all flesh belonging to tuberculous animals, and it expressed a wish that tuberculosis be included in the sanitary laws of all countries in the world amongst the contagious diseases, requiring special prophylactic measures.

In the human being when tuberculosis exists, it is important to get rid of it, and so prevent a general infection of the body. In the recent lectures (*Lancet*, July 27, 1889), by Mr. Howard Marsh, he says that so long as tubercle was regarded as a constitutional affection with local manifestations, treatment was directed mainly to the constitution, as it was regarded as useless to remove a mere local manifestation if the essential disease were left behind. With the discovery of the infective nature of tuberculosis and the danger of a limited caseous deposit being a source of total infection for distant organs or for the whole body was impressed on surgeons, and the expediency of the removal of tubercular deposits was discussed. Now, everything was said to depend on micro-organisms, and perhaps this doctrine was carried to greater extent than was warranted by clinical experience. Mr. Howard Marsh, in speaking of hip joint disease, does not believe in the early removal of the tubercular focus, but would limit operative interference to the opening of abscesses, and trusts to prolonged rest with extension and fixation and general hygienic precautions. He gives statistics to show that the danger of general and distal tubercular affection from bone and joint disease has been exaggerated, and that it is known to occur in only about five per cent. of all cases of hip disease. Mr. Marsh thinks the tendency of tubercular disease of bone is to be self-limited and to undergo recovery, suppuration must not be regarded as destructive, but as nature's method of getting rid of dead tubercular matter. The mortality in the operation, he says, is twenty per cent., whereas if the joints are left alone it is only five per cent. I think Mr. Marsh has placed the mortality (20 p c.) rather too high. In the hands of skillful antiseptic men it is certainly not, as far as my experience goes, as great as one in five. If we hold these tubercular processes to be due to a distinct micro-organism and that they are infective, it seems to be more logical to remove the focus of infection than to wait for nature to effect a cure. The utility of operative interference in cases where patients cannot afford a prolonged treatment (such cases as those seen in hospital practice), in my opinion does not admit

of a doubt. In knee joint affections and affections of the ankle, the results of operative interference have been brilliant. Of course, we must bear in mind that the later the case is left the more serious is the operation necessary for the removal of the disease and the greater the after deformity.

Immediate and Remote Results of Operations for Local Tubercular Disease.—At the recent Congress of French Surgeons, held in Paris during October last (*Le Semaine Médicale*), M. Guyon read a paper on the above subject. He recorded three cases of tubercular disease of the bladder on which he had operated. One patient had suffered from vesical tubercular disease for two years. After operation he made a good recovery, and has had no recurrence. The second case operated on in April, 1887, died two years after, in July, 1889, of suppurative nephritis; at the autopsy the left kidney was completely destroyed and the right was deeply involved, but no tubercular growths could be found. The third case was operated on in 1888 for vesical mischief, dating back nine months; his kidneys were evidently diseased, but, as the patient had painful micturition as many as 100 times during the night, he decided to operate. He operated by the supra-pubic method, scraped and cauterized the ulcer, and greatly relieved the symptoms, so that the patient lived in comfort for a year afterwards. At the autopsy there was not the slightest trace of any return of the tubercular matter. Dr. Guyon said he thought the supra-pubic operation was much the safer. The only case cured was the first, but he believes that he would have cured the others had not the kidney lesion existed. Tubercular disease of the bladder has a very superficial origin (in the mucous membrane) and scraping and application of cautery removes completely the disease.

The Treatment of Erysipelas.—According to the *Therapeutische Monatsch*, Sept. 1889, the treatment of erysipelas by germicides is growing in favor. Carbolic acid is too irritating. Koch, of Vienna, uses creolin, his formula is one part of creolin, four of iodoform and ten of lanolin. This is spread on the erysipelatous area, and an inch or two beyond its boundaries,

and covered with gutta percha tissue. The theory is that iodine is set free in the combination, and that it, as well as creolin, acts as a germicide; the results appear to be good.—(*Vienna Klin. Woch.*, 1889, No. 27.)

Mechanical Treatment of Erysipelas.—Dr. Wölflers, in an article lately published (*Wiener Klin. Woch.*, June 6th, 1889) reports two cases in which the mechanical treatment was unsuccessful, and three in which it was successful. His treatment is to outline the area of the disease with strips of sticking plaster. He has found that the disease will not pass over these limits. Care should be taken that the strips be closely applied to the skin and the hair should be shaven from the skin. In facial erysipelas it is advisable to shave over the scalp. In a case of erysipelas following ulcer of the arm 7 strips of plaster were placed about the wrist, and as the axillary glands seemed already affected, the second strip was placed over the shoulder and along the sides of the thorax, and the limits were completed by a third strip at the waist. The disease progressed, accompanied by fever, until it reached the sticking plaster, but went no further, the fever ceased and rapid healing followed. Another case of erysipelas following ulcer of the leg. The bands of plaster were placed around the thigh. The disease quickly extended to the first band, and a very slight inflammation extended beyond it, but did not reach the second band; fever now disappeared, and the ulcer healed. The third case was one of facial erysipelas. A strip of plaster around the neck quickly checked the progress of the disease. The two unsuccessful cases consisted of one of gangrenous erysipelas of the thigh and pelvis, death in twenty-four hours; and a case of erysipelas of the chest, following an operation for empyema, death in three days. In the same journal for June 14th, Wölflers records seven additional cases, all of which resulted favorably.

At a meeting of the Suffolk District Medical Society, Dr. J. C. White said that he could get control over erysipelas generally in three days by simple treatment. Of 100 cases of ordinary facial erysipelas, perhaps three would not yield within three days by simple antiseptic treatment. Dr. White ap-

plies, during alternate hours of the day and evening, a mild solution of carbolic acid and alcohol as an evaporating lotion. It is in only very exceptional circumstances that the disease is not under control or has disappeared within forty-eight hours, but it would astonish him if every vestige of the disease had not disappeared in three days. He has treated erysipelas in this way for many years, and has never known it to fail. He speaks of ordinary cutaneous erysipelas only, not the phlegmnaous variety. He uses a formula of acid carbolic crystals, 3p., alcohol and water ʒiv.—(*Boston Medical and Surgical Journal*, June 13th, 1889.)

In an article on the "*Surgical Treatment of Erysipelas in Children*," Dr. A Siebert (*N.Y. Medical Journal*, Oct. 19th, 1889), says that to open inflamed skin by numerous incisions made all over the diseased surface, and then to cover the part with antiseptic lotion, has been practised for some time with moderate success. So has also the injection, hypodermically, of a 2 per cent. solution of acid carbolic into the healthy skin surrounding the inflamed part. Kraske's method was the first step in the right direction. He made regular incisions in the border of the erysipelas extending into the healthy skin, and he crossed these diagonally with others. The object was to give a good chance to the cocci to get to the surface and come in contact with the antiseptic fluid which was applied to the skin; the dressing was constantly moistened with the antiseptic fluid for a few days. The results were excellent. Riedel and Lauenstein (*Deutsch Med. Woch*, for Oct. 19th, 1889) proposed to improve Kraske's method by locating the incisions entirely in the healthy tissue, about one to two inches away from the border of the erysipelas. This was to avoid possible infection of the aseptic tissue. This modification has given better results than any other method. The patients were usually put under an anæsthetic, and the whole operation performed antiseptically. Dr. Siebert has used this method in three cases in children, with the result of limiting the spread of the affection. He does not put the patient under ether, but uses the "vaccination harrow," and so does away with objections parents have to the employment of anæsthetics.

Physiological Resistance of the Peritoneum to Infection.—During the past year Rinne (*Archiv für Klin. Chir.*, 1889) has made some most interesting experiments in surgical pathology. Practically and clinically it has been demonstrated that the peritoneal cavity, under certain unknown circumstances, has the power of taking care of a vast amount of filth. Rinne has found that large quantities of septic material and pure cultures of pyogenic bacteria were absorbed although injected daily into the peritoneal cavity of animals, provided the peritoneal surface was uninjured. The injections produced only mild symptoms in direct proportion to the quantity of septic material used, and in no case was there more than a moderate rise of temperature. The results were very different when there were coincident defects in the peritoneum exposing the sub-peritoneal tissue to infection. Then there invariably appeared progressive suppurative peritonitis going out from the infected connective tissue, which usually terminated fatally. The practical import of these experiments can hardly be over-estimated. They explain why the escape of pus into the peritoneal cavity, from the rupture of a pyosalpinx, is not necessarily fatal if the tube is promptly extirpated and the wound and stump properly treated. They point out that the incision is the point of general danger in all abdominal operations, and they indicate that too great care cannot be exercised in bringing accurately together the peritoneal edges of the wound. They explain why the removal of abdominal tumors is so much more dangerous after adhesions have taken place, because the resulting denuded spots offer less resistance to the invasion of septic bacteria. They explain the success of those operators who disregard the dictation of scientific bacteriology, and also the recovery of patients after abdominal section by horned animals. They teach us to consider cautiously the evidence presented by statistics of operators and await the demonstration of more exact methods as to the import of their results. They warn us that clinical evidence is inadequate to overthrow the deductions of experimental physiology and pathology, and that our time is provided with methods of precision which are yet imperfectly improved. The resisting

and absorptive power of the peritoneum is beyond that of any other serous cavity (*Journal of the American Medical Association*, Oct. 17th, 1889).

Surgery of the Liver.—Mr. Lawson Tait has a very interesting paper on the above subject (*Edinburgh Medical Journal*, October and November, 1889), in which, in his characteristic and forcible way, he gives the history of this branch of surgery, and details his own experience, which consists in seventeen cases of exploratory incision with one death; seventeen cases of hepatotomy with two deaths, and fifty-five cases of cholecystotomy with three deaths—a remarkable record. Petit was the first to describe the operation of cholecystotomy as now performed, yet his description of the operation was unnoticed for 150 years until Marion Sims put it into actual practice in 1878. The result in this case was fatal. In 1879 Mr. Tait successfully performed the operation on a woman aged 40. The patient is still alive. Of the fifty-five cases performed by him, fifty-two were successful, one old woman died of a suffocative catarrh some weeks after the wound was healed, two others died of cancer of the liver, which was, in all probability, the cause of the distended gall bladder, for no gall stones were found. In not a single instance did a patient die from the operation. All the other patients, with one exception, were in perfect health at the time the article was written. Mr. Tait's method of performing the operation of cholecystotomy is well known. He stitches the distended bladder to the abdominal wound and then incises it, evacuates the fluid, and removes the stones, leaving a drainage tube in the gall bladder. He condemns the practice advocated by Sir Spencer Wells, of opening the gall bladder, removing the calculi, and then closing the wound in the gall-bladder by continuous suture without attaching it to the abdominal wall. As far as Mr. Tait knows, the method has been fatal in every instance where it has been tried. Mr. Tait says it is generally supposed that gall stones form in the gall bladder, but this is not true, for the nuclei of gall-stones are found in the streams of bile as they flow through the substance of the liver. In fact he has cut gall-stones out of

abscesses in the substance of the liver. Gall-stone is not a disease of the gall-bladder at all. Mr. Tait says that if this be true there is no justification for the removal of the gall-bladder, except in cases where it is greatly thickened and suppurating, and that these are the very cases where it is an impossible operation. The one argument against cholecystotomy, viz., that biliary fistulæ remain occasionally and permanently, is an argument of much greater force against the removal of the gall-bladder, and the so-called operation of cholecystectomy, for such a fistula, after cholecystotomy, must be due to the fact that the operation had been performed at a time when a gall-stone or gall-stones had become impacted in the common duct. In several of such cases Mr. Tait has crushed this obstructing gall-stone, and has thus succeeded in clearing the common duct. In one case (the exception alluded to above) he succeeded in crushing one stone. At the post-mortem held seven years after, both cystic and common ducts were found obstructed from one end to the other, and the result was the patient had a permanent fistula. She lived comfortably four or five years, and finally died of phthisis. In such a case the removal of the gall-bladder would have been the very worst proceeding possible.

Mr. Mayo Robson has recently been successful in making a connection between the gall-bladder and adjacent coil of intestine, and in this way the trouble of a biliary fistula was avoided. However, most of these cases may be avoided by the operation of cholelithotrixy, that is, make a fresh opening in the abdomen and crush the stone outside the walls of the duct by means of padded forceps.

Tait divides gall-stones into two varieties, viz., "solitary" gall stones and "numerous" gall stones. The "solitary" is not always quite solitary, but it has rarely more than one companion. The "numerous" gall-stones are practically indefinite in number, are usually uniform and not of large size. Several interesting cases are detailed. In one the abdomen was opened for a supposed par-ovarian cyst. The cyst was opened and found to be a distended gall-bladder; the opening was enlarged, the hand introduced, and a large gall-stone, which was imparted in the neck

of the bladder, removed ; the opening in the gall-bladder was stitched to the abdominal walls, and a drainage tube inserted ; bile began to flow on the morning of the third day. The woman made a perfect recovery.

Disappearance of Tumours after Exploratory Incision.—In the second article on the surgery of the liver, Mr. Tait begins by saying that there are certain diseases, in some instances unknown, which seem to yield to surgical treatment applied to them by accident. He says that he has, on more than one occasion, drawn attention to the astonishing disappearance of tumours, often of large size, after a mere exploratory incision. The absolute silence with which these statements have been received by the profession has surprised Mr. Tait. They are true enough, and the experience of others in the future will substantiate them. The cases in which he has seen tumours disappear in this way are chiefly cases of diseases of the liver, spleen and head of the pancreas. He has seen others where the exact site of the origin of the growths could not be accurately ascertained. Mr. Tait is satisfied, from the number of these cases seen by him, that the disappearance is not a mere co-incidence ; he is convinced that the mere opening of the peritoneal cavity has a direct influence in setting up the process of absorption of the tumour, and this conviction has increased his confidence in the principle of exploration. That some physiological change is at once set up by opening the peritoneal cavity is clearly indicated by the uniform onset of a most distressing thirst, which lasts for days, and is not seen so markedly after any other operation. In operations down to the serous cavity this thirst does not occur, but let the serous cavity be opened but a finger's breadth and the result is marked.

A number of remarkable cases of exploratory incision for tumours, &c., of the abdomen are narrated, in which the tumours disappeared, although apparently of a malignant nature. One very remarkable case was that of a lady aged 54, who was the subject of symptoms strongly pointing to the possibility of gall-stones ; Mr. Tait's own impression, however, was that she was suffering from cancer of the liver. An exploratory incision was

made ; the liver was found scattered with large hard nodules, one of which closely imitated the lump which had led to the diagnosis of distended gall bladder. No doubt was expressed at the time of operation that this was a case of cancer of the liver. At all events, the patient was cured and is at the present time perfectly well.

Four times Mr. Tait has opened the abdomen for the purpose of removing enlarged spleens, and in every case he has been deterred from proceeding with the operation by reason of the hopelessness of the outlook for the patient. Strange to say, in three of the four cases the tumour has disappeared, and they are now in perfect health. The fourth succumbed to the exploratory incision.

In another case he explored a tumour which appeared to be in the position of the head of the pancreas, in a lady who had become much emaciated, and was supposed to be suffering from cancer. The exploratory incision resulted in the complete disappearance of the tumour in five or six weeks, and restoration to former state of health.

Abscesses and Hydatids of the Liver.—Mr. Tait thinks modern surgery is to be congratulated upon the distinct advance it has made in the treatment of abscesses of the liver, and hydatid tumours of that organ. Mr. Tait has on seventeen occasions deliberately attacked these two diseases by abdominal section, and in fifteen cases he was completely successful. He was the first to remove hydatid tumour by opening the tissue of the liver, and reports his first case operated on in 1879. The patient recovered without a bad symptom. His method is to incise the liver and stitch its edges to the abdominal wound and put in a drainage tube.

Mr. Tait is perfectly sure that there are two varieties of hydatid cysts. The more common is the large single cyst, formed of gelatinous layers easily stripped from one another, the fluid is limpid and free ; these are the cysts that are sometimes cured by tapping. The other variety is the multiple variety, where the cysts are numerous, and vary in size from a pin's point to that of a cocoanut ; they lie packed together in a cavity of the

liver, which is not lined by a sac, and in the wall of each of these cysts there are fastened to the base enormous numbers of scolices of another tape worm. In this class of cases the liver ruptures and the hydatids are poured out loose into the cavity of the peritoneum, and then they penetrate the tissues in all directions.

When the author first attacked the liver by surgical operation he was in terror of hemorrhage, for he thought that if an incision opened a large sinus, the arrest of hemorrhage would be a matter of considerable difficulty, but he once, while performing ovariectomy, accidentally tore the edge of the liver and free hemorrhage took place, which was immediately checked by the application of a small piece of solid perchloride of iron. In another case where he incised a large sinus in the liver, he passed a thread down one side of it and up the other, and tied the sinus, thus completely and easily arresting the hemorrhage.

In his operation upon abscesses of the liver all the cases have recovered, with one exception. He treats these cases of abscess like any other cyst. He sutures the edges of the liver to the abdominal wound and drains; the stitches always hold well, and he thinks there is no need of procuring adhesion between the peritoneal surface of the abdominal wall and the wall surface of the liver, and that operations may be done at one sitting with as great readiness upon the liver as upon any other organ in the abdomen.

Lumbar Cholecystotomy.—In the last volume of *The Transactions of the American Surgical Association*, Dr. Mears, of Philadelphia, reports the case of a woman, aged 29, who was admitted to the hospital for the operation of nephrorrhaphy, or fixation of the kidney. She had a rounded tumor about the size of the kidney lying a little to the right of the median line at the junction of the hypogastric and umbilical regions. The tumor was freely movable in all directions. A vertical lumbar incision was made, the right kidney exposed, its capsule divided and stitched to the edge of the wound. The tumor was uninfluenced by this procedure. In pressing it towards the loin it was made to bulge in the wound covered by peritoneum; the peritoneum was

divided, when the tumor was found to be a distended gall-bladder. The fundus was incised and a gall-stone was found in the cystic duct. As it was impossible to extract it, it was crushed *in situ* and the fragments pushed on into the intestines. The patient made a perfect recovery. The case is interesting rather as a warning than as a guide.

Surgery of the Gall Bladder.—At the 18th Surgical Congress, held in Berlin, June 1st, 1889, Prof. Credé, of Dresden, spoke on this subject. His observations were based on five cases. All had suffered from gall-stones for years. In case 1 no tumour could be felt, but in others the swelling was evident. In cases where there was degeneration of the gall bladder, and there was no chance of restoring the function of the gall bladder, extirpation was demanded. He had removed the gall-bladder successfully in one case. In the discussion which followed, some surgeons who had extirpated the gall-bladder stated that a bile fistula persisted. Langenbuch had extirpated the gall-bladder 24 times. The more experience he had, the more need he felt of collecting further information. Cholecystotomy was an operation that well deserved recognition, although its results were not so favorable as represented. Out of 75 cases of operation there had been two relapses, 11 deaths, and 16 cases of fistula. He himself had only lost two out of 22 cases. In cases in which he found the common duct filled with calculi, he would not operate at all, or with the greatest caution.

At a meeting of the Clinical Society of London, held October 25th, 1889, Mr. Mayo Robson, of Leeds, communicated a paper on 15 cases of cholecystotomy which he had performed, eleven were for gall-stones, one for empyema of the gall bladder, two for distended gall-bladder, due in one case to cancer of the head of the pancreas, and the other to cancer of the bile duct. All the patients operated on for gall-stones recovered. The case of cancer of the head of the pancreas died on the eighth day. Mr. Robson spoke of the difficulty of operation in those cases where the gall-bladder was shrunken, and where it could not be attached to the abdominal wall. In one case he sutured a piece of omentum, on the one hand to the gall-bladder, and on the

other to the parietal peritoneum, thus shutting off the general peritoneal cavity. This method of omental grafting was suggested by the operations of Dr. Senn.

Mr. Robson said that, with due care, he thought the operation of cholecystotomy was attended with comparatively little danger, provided there was no malignant disease.

Mr. Knowsley Thornton said it was not always easy to distinguish between a distended gall-bladder and a tumor of the kidney, and cases where there were thick adhesions around the gall-bladder, with suppuration, were difficult to diagnose. If the gall-bladder was distinct, the operation was easy. If the stone had passed into the cystic duct, the operation was difficult. It was a good plan in such cases to break up the stone by needling it. In one case he had slit up the common duct, removed the stone, then stitched up the duct; the patient recovered. He considered artificial connection of the gall-bladder with the intestine a radically wrong procedure, inasmuch as the opening in the bowel wall was likely soon to close.

Mr. Thornton agrees with the German surgeons and, notwithstanding the opinion of Mr. Tait, thinks that cholecystectomy is the operation of the future. It causes no more risk to the patient and effectually prevents another stone from blocking up the cystic duct.

Mr. Barker mentioned a case where he had operated and had only found a distended gall-bladder with some hardening of the head of the pancreas; he had closed the wound, and the patient was quickly better and recovered perfectly.

Sir Joseph Lister's New Antiseptic Dressing.—At a meeting of the Medical Society of London, held November 4th, 1889, Sir Joseph Lister delivered an important address on a new antiseptic dressing (*Lancet*, Nov. 9th and 16th, 1889). The author described his laborious and painstaking search for a new and more reliable surgical dressing. The address is characteristic of the man, and the story it tells is a revelation of scientific acumen, perseverance and minute attention to detail, which are required for such work; it also displays a wide and practical knowledge of chemistry. This subject has engaged the illustrious

surgeon during the last five years, the last report he made was about his bi-chloride of mercury, when he showed that it formed a compound with mercury, which was soluble in blood serum, and he brought forward a serum sublimate gauze. This not proving entirely satisfactory, Sir Joseph sought for new agents, and experimented with the double chloride of ammonium and mercury, called sal alembroth. This was a good antiseptic, and less irritating than bi-chloride, but again objections cropped up, for the compound was soluble not only in water, but in serum, so another series of experiments was made with cyanide of mercury. This was found high as to inhibitory, but low in germicidal power; it was also irritating and very soluble. The double cyanides were next tried. Mr. Martindale suggested one of the insoluble double cyanides of mercury and zinc, and this compound has proved superior to all substances hitherto used. There are several of these double cyanides; there seems to be some doubt as to the precise compound which exists in the preparation of cyanide of mercury and zinc, but it is certain that the mercury in it is an important, though not in quantity a large, factor. The very ingenious method by which, after many trials, the substance was incorporated with starch, with which it forms a kind of combination whereby it can be affixed to gauze so neatly that in the dry state it does not dust off and in the wet state it does not wash away. Sir Joseph looks upon the gauze as a perfect success; it is antiseptic, porous, permanent and non-irritating. The double cyanide of zinc and mercury was not at first successful, and some early difficulties caused it to be abandoned. Then iodide of mercury was tried, because it was an antiseptic and sparingly soluble in water. It is more soluble in blood serum, but then it is very irritating, and difficult to fix in the gauze; the latter objection was removed by the starch, then used for the first time. Here, as with the double cyanide, a loose kind of molecular combination seems to take place and the iodide does not dust off, but the experiment was not satisfactory so he went back to the double cyanides.

In wounds about the head or hairy parts, the cyanide moistened with a weak solution of corrosive sublimate may be rubbed

into the hairy parts, when it will convert the hairs into an antiseptic dressing. In conclusion, the author says that there are those who still believe that the use of antiseptic substances in surgical practice is always useless, if not injurious. The germ theory of septic diseases is indeed now happily established incontrovertibly. All now admit that septic mischief in our wounds depends on the development of micro-organisms in them derived from without. But the gentlemen to whom Sir Joseph refers are disposed to trust everything to the antiseptic powers of human tissues. Sir Joseph was the first to direct attention to the antiseptic properties of living structures; without it surgery in former days would have been absolutely impossible. Still he knows too well from experience that it cannot always be trusted, and that the use of antiseptic adjuncts is in the highest degree important. He again says, "I have the satisfaction of knowing that there is among you a constantly increasing number who, when they have operated on unbroken skin with a fair field around for the application of their dressings, if they see septic inflammation occurring in the wound with its attendant dangers, know that it is their fault or the fault of the antiseptic dressings at their disposal. To those among you who are impressed with this conviction, I offer the dressing which I have described as the most satisfactory that I have hitherto met with."

The Construction of a New Bladder after Excision.—At the Surgical Congress recently held at Bologna, Professor G. Tizzoni, of the University of Bologna, and A. Poggi, gave an account of some experiments they had made on dogs, with a view of ascertaining whether the bladder could be removed and an efficient substitute constructed by operation. First of all laparotomy was performed, and a loop of small intestine about 7 centimetres in length, with its mesentery attached, was isolated by two transverse cuts, washed out with a carbolized solution and tied at both ends, one extremity being fixed in front of the neck of the bladder. The two ends of the divided gut were then stitched accurately together by circular sutures. The dog soon recovered from the operation, and a month later

the second stage of the operation was performed. The ureters were separated from the bladder and the latter was completely removed. The loop of intestine destined to be the new bladder was then cut across at the lower end and then stitched to the neck of the bladder. The ureters were then turned into the artificial bladder. A slender elastic drainage tube was placed in the urethra to carry off the urine during the first few days. The animal recovered perfectly, and gradually acquired control over its new bladder, and when shown to the congress two months later showed no signs of incontinence. The operation has been repeated with success on several animals, and Drs. Tizzoni and Poggi are hopeful it may be applicable to the human subject.—(*London Medical Recorder*).

Trephining the Sacro-Iliac Joint.—Mr. Mayo Collier, (*Lancet*, Oct. 19, 1889), reports a case of sacro-iliac disease successfully treated by trephining. The case was a lady aged 34, who had suffered for some four years from pains in and about the right hip and lameness. She was treated for ovarian irritation by massage, etc. Mr. Collier diagnosed the affection; the patient had a tuberculous family history; pain was complained of on walking or sitting on right tuber ischii, pain on coughing, on deep iliac pressure, and when the ilia were pressed together; pain was also marked on pressing immediately over the joint behind. Thomas' splint did not relieve the case, so Mr. Collier decided to trephine the joint from outside. A curved incision eight inches long parallel with and an inch below the posterior third of the crest of the ilium and descending vertically over the joint, exposed the bone sufficiently. The bone was next denuded with the elevator, and now was seen to be distinctly swollen and inflamed. A line being drawn from the anterior superior spinous process to the posterior, two inches were measured from this posteriorly. The pin of the trephine was placed on the line so that the edge of the circle should be on the two inch line. The joint was rapidly penetrated. It was found denuded of cartilage and the bone was eroded. The diseased structures were removed with gouge and mallet and the joint swabbed with chloride of zinc (40 grs. to the

ounce) ; a large drain was introduced. The patient rapidly recovered and in six months was able to return to her home in South Africa.

Healing of Aseptic Bone Cavities.—Dr. N. Senn, (*American Journal of the Medical Sciences*, September, 1889), has a most interesting article on the healing of bone cavities. Neuber, of Kiel, some years ago introduced a method of implantation of skin flaps, after chiselling or gouging the bone sufficiently to allow the soft parts to be brought into contact with the floor of the cavity. These flaps were fastened securely into position with bone nails and in many cases primary union resulted. Schede and others also attempted to secure healing under aseptic moist bloodclot, and good results have been obtained, but also there have been many failures. Dr. Senn substitutes for the bloodclot aseptic decalcified bone chips ; they are absorbable, firm, and form a good scaffold upon which granulations can be supported. He made a number of experiments on dogs before applying the method to man. The results have been apparently satisfactory. In operations on the skull he fits an aseptic bone-disk into the trephine opening ; this arrests hemorrhage from the bone and prevents adhesions between the dura mater and external parts, it is gradually absorbed, a mass of granulations takes its place, and the defect is closed by dense cicatricial tissue or by bone. The disk is perforated for the purpose of drainage and to allow the granulations to penetrate easily. For the healing of bone cavities, chips of decalcified bone are used, after thorough disinfection of the cavity and dusting the bone chips and cavity with iodoform, the decalcified bone is rendered thoroughly aseptic and antiseptic by keeping it immersed in sublimate alcohol (1:500). The wound is completely closed with the exception of the lower angle where a capillary drain of a few threads of catgut is introduced. Rapid healing takes place in one or two dressings, with entire restoration of the continuity of the bone. His conclusions are—

(1). Antiseptic decalcified bone is the best substitute for living bone grafts in the restoration of a loss of substance in bone.

(2). Implantation of a bone disk into a trephine hole may be relied on as a hemostatic measure in arresting hemorrhage from the vessels of the diploe, and is a good temporary substitute for the lost portion of cranium.

(3). The packing of an aseptic bone cavity with antiseptic bone chips guards against unnecessary loss of blood and prevents infection by pus microbes.

(4). Capillary drainage should be established after implantation to remove the accumulation of more blood in the wound than is necessary to form a temporary cement between the bone chips and surrounding tissues.

(5). Packing by bone chips acts as an antiseptic tampon.

6). Secondary implantation can be successfully carried out in treating a suppurating bone cavity after suppuration has ceased, and the cavity can be transformed into the same favourable conditions for healing as an aseptic wound.





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